Determinants of Foreign Direct Investment in MENA Region

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Abstract

This thesis investigates empirically the determinants of Foreign Direct Investment (FDI) into countries of the Middle East and North Africa (MENA) region. The empirical analysis of this thesis conducted at three different levels, intra-regional level, country-level and firm-level. Chapter five investigates FDI determinants between MENA countries using a gravity model with fixed effects included in the model. The results indicate that traditional gravity factors play important roles in explaining the level of FDI between MENA countries. The effects of geographical distance, common borders and bilateral investment treaties are particularly relevant to FDI within the region, suggesting that bilateral FDI flows tend to be larger between neighbours, having already established bilateral investment treaties agreements. The results also show that FDI inflows differ between MENA countries according to their economic and institutional structure. Resource-rich countries on average receive less FDI compared resource-poor countries in the region. Furthermore, FDI to resource-poor countries found to responds negatively to the availability of natural resource, and positively to the quality of institutions, opposite to the case of the resource-rich countries.

Chapter six investigates the determinants of FDI into MENA and developing countries. The empirical analysis of this chapter aimed to answer the question of whether determinants of FDI in developing countries affect MENA countries differently. The results indicate that a MENA country receive on average 1.21

percent less FDI than a non-MENA country, and that the natural resources have a direct negative effect on FDI to MENA countries even after controlling for the necessary factors for both MENA and developing countries. The marginal effects of return on investment, quality of infrastructure and macroeconomic instability on FDI were found to be less for a MENA country compared to a non-MENA country. The results also show that qualities of institutions in MENA countries are negatively affected by the presence of natural resource in these countries (resource curse effects). Unlike other developing countries, the interaction between natural resource and institutions in MENA region found to have adverse effect on FDI.

Chapter seven investigates the effect of FDI and business environment constraints on the performance of firms in three MENA countries, Egypt, Morocco and Turkey using firm-level data. The results indicate that foreign ownership has positive significant impact on performance of firms in the three selected MENA countries. The results also show that performance of firms in the three MENA countries hindered by the constraints of business environments in these countries. Education of labor, access to finance, electricity outages obstacles and corruption were all found to have negative effects on the growth and performance of firms. The results also indicate that performance of firms differ across countries and industries. A comparison in term of firms' performance indicate that on average, textiles and garments firms in Egypt have less comparative advantage in their productivity per worker than firms in Turkey and Morocco.

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Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work.

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List of Abbreviations and Acronyms

FDI	Foreign Direct Investment
MNEs	Multinational Enterprises
PLC	Product Life Cycle Theory
WBES	World Bank Enterprise Survey
UNCAD	United Nations Conference on Trade and Development
MENA	Middle East and North Africa
GCC	Gulf Cooperation Council
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Square
RESET	Ramsey Equation Specification Error Test
VIF	Variance Inflation Factor
OLI	Ownership, Location and Internalisation
BIT	Bilateral Investment Treaties

Chapter 1

Introduction

1.1. Research Aims and Objectives

FDI inflows to MENA, as well as to other developing countries, considered to be very important and play a vital role in the development of these countries. FDI allow for the transfer of technology, provides for financial capital needs, enhance the productivity of domestic firms and, more importantly, generate opportunities of jobs for unemployment. Unfortunately, MENA countries have not been successful in reaping the benefits of FDI as much as other developing countries and the region still lagging behind many other developing countries in term of economic development. With a total population of more than 400 million and a high level of unemployment ranging between 10 and 25 per cent in 2010(O'Sullivan et al. 2011), MENA countries are in desperate need of more FDI inflows to resolve their economic problems. The last events of the Arab Spring have brought to light many of these economic problems that have already existed in the region for decades.

These economic problems include high level of unemployment; persistent corruption and lack of accountability and transparency; bloated public sectors with state-owned enterprises that crowd out the development of private enterprise and investment; low number of enterprise creation; and, for a number of countries, a high dependence on fuel and food imports, (O'Sullivan et al. 2011). The flow of FDI to the MENA region can play an important role in resolving these economic problems by providing opportunities for jobs and also by providing financial capital for creating businesses. FDI can also contributes to the development of the region through technology, knowledge and skills spill-over effects; they can also enhance the productivity of local firms that lack many of these advantages, thus making them internationally more competitive. However, attracting FDI to the MENA region is no easy task and it depends on a number of macro and micro determining factors relating to type of investment, its purpose, and the economic sector targeted. The main objective of this research is to investigate empirically what factors determine FDI to MENA countries with especial emphasis on the role played by the availability of natural resource and quality of institutions in these countries. In order to find an answer for this general question, we conduct several empirical analyses at different levels (intra-regional, regional and firm-level) to see what factors are the most important for the flow of FDI to MENA countries at each level. The specific aims of these empirical analyses can be summarised as follows:

1) To investigate the determinants of bilateral FDI *between* MENA countries. Intra -MENA FDI represents nearly one third of total FDI from the World to region, (Chauvin 2013). Therefore, the question of what determines these flows is worth investigating. Also, because the MENA region is

geographically and culturally linked, examining this question in the context of the gravity model can provide an answer to the question of whether geographical and culture factors play important roles in explaining the level of intraregional FDI between MENA countries. The empirical analysis also aims to investigate the question of whether there are differences in the determinants of intra-MENA FDI inflows to the resource-rich and resource-poor countries. The MENA region comprises a set of countries that are economically diverse; some of these countries are resource poor and labour abundant (Egypt, Jordan, Morocco, Tunisia and Yemen), while the others are resource-rich and labour-importing (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates). We therefore expect FDI determinants for each group of countries to be different.

2) To investigate the question of whether factors that affect FDI in developing countries affect countries in MENA region differently. Total FDI inflows to MENA and developing countries have increased in the last two decades; however, the share of FDI received by MENA countries is less than that share received by other developing countries in Asia and Latin America. MENA countries are in need of more FDI inflows as much as in developing countries to resolve their economic problems. Therefore, the question of what factors determine the flows of FDI to MENA compared to developing countries needs to be investigated. In the literature on FDI determinants to MENA countries, there are two empirical studies that have investigated this question, namely Onyeiwu (2003) and Mohamed and Sidiropoulos (2010). However, the results from these studies are mixed about what makes

developing countries different in their attraction to FDI than MENA countries. Also, none of these studies have taken into account the difference in the economic and institutional structure between MENA countries. The aim of our study in this regard is to go beyond their analysis and provide new evidence about the role played by the availability of natural resource and quality of institutions on FDI to MENA region.

3) To investigate the effects of FDI and business environment constraints on the performance of firms in MENA countries using firm-level across countries comparable data provided by the World Bank. To the best of our knowledge, the Business Enterprise survey dataset has not been used in any empirical analysis looking at the main constraints on firm's performance in the MENA region. Empirical evidence on the literature of firm-level FDI and performance of firms in MENA region is very limited. Examine this relationship in the context of MENA countries can enhance our understanding about what factors matter most for foreign investors to invest in the region. More specifically, the aim of this analyse is to find answers for the three following questions: 1) What is the effect of FDI on the performance of firms in MENA countries? 2) What are the business environment constraints that determine the performance of firms in MENA countries? 3) Is there any differences in the performance of firms across countries and industries?

1.2. Research Motives

The research is mainly motivated by the scarcity of empirical studies on FDI determinants in MENA region. With regard to the previous empirical studies concern MENA region, there were only a limited number of studies that have investigated FDI determinants in MENA region at intra-regional and firm-levels. This scarcity in the number of studies is mainly attributed to the lack of FDI data available on MENA countries at both bilateral and firm-level. However, in recent years, data on MENA countries become available for researchers and easily accessible through websites. The Arab Investment & Export Credit Guarantee Corporation is a joint-Arab agency encompassing all Arab countries and it provides bilateral FDI data between MENA countries. Therefore, one of the motives for carrying out such an empirical analysis is to make use of this unique bilateral FDI data available on MENA countries and find answers to our question about what factors determine intra-MENA FDI.

Likewise, empirical studies at firm-level on MENA countries are very scant. Atyias (2011) provides a review to the empirical studies that have used firm-level data on MENA to provide some thoughts on what sort of research questions would be fruitful and what sort of data can be used to address them. The author pointed out that there is an expanding literature measuring the impact of the business environment on firm performance using World Bank Enterprise Survey. However, such studies have not been carried out in the context of the MENA region.

1.3. Research Methods of Analysis

The empirical analyses of this thesis required an application of different econometric methods, due to the nature of the available data on MENA countries and according to the aims of the research. For instance, in chapter five, we use a panel gravity model estimated by ordinary least square (OLS) and probit estimation to overcome the problem of missing FDI data, as well as to provide comparative results as a robustness check for the validity of our results. Also, we used dummy variables as a way of implementing fixed effect to take into account the effects of time-invariant variables, such as physical distance and common borders and language. Matyas (1997) use importer and exporter dummies in addition to the time dummy in a gravity model to address the issue of unobservable heterogeneity of country pairs. In chapter six, we use a pooled OLS with time and country fixed effects to capture the dynamic effect of the data over time. Also, we use interaction terms between the explanatory variables to investigate the difference in FDI determinants between MENA and developing countries. The use of interaction terms between is very useful in our analysis as it helps to identify the differences in the determinants of FDI inflows to MENA in comparison to developing countries. Finally, in chapter seven, we use dummy variables to control for the effect of firm size and also to assess for the differences in performance of firms across countries and industries.

1.4. Structure of the Thesis

This thesis consists of eight chapters. Chapter one provides a review to the economic and institutional performance of MENA countries, discussion about the links between FDI, natural resource and Dutch disease effects and the benefits and costs of FDI to the host country in general. Chapter two provides a review of the development of FDI theories and highlights their contribution to the overall understanding of FDI phenomenon. Chapter three provides a review of the empirical literature on FDI determinants at country and firm level, with special emphasis on MENA and developing countries. Chapter four provides a review of the theoretical development and empirical applications of the gravity model in trade and investment. Chapter five investigates empirically the determinants of intra-MENA FDI using a basic and augmented gravity model. Chapter six investigates the determinants of FDI to MENA countries in comparison to developing countries. Chapter seven investigates empirically the effect of firm-level FDI and business environment constraints on the performance of firms in three MENA countries, Egypt, Morocco and Turkey. Finally, chapter eight presents the research summary of the empirical findings, contribution, policy implications, limitations and further area of research.

1.5. MENA Economic and Institutional Outlook

MENA region comprise a set of Middle Eastern and North African countries that are economically divers. Table 1.1 presents the MENA economic performance indicators over the period 1996-2011. As can be seen from this table, there is important differences in the economic structure of MENA countries. GDP per capita between the MENA countries varies considerably, from Qatar having the highest per capita income of 46598 US$ to Sudan with the lowest per capita income of 719 US$. In term of population size, Egypt, Iran and Turkey are the countries with the largest populations among MENA countries. In term of economic size, the GDP of Turkey is the largest among MENA countries, while the GDP of Bahrain is the smallest accounting only for less than 1% of the total MENA countries' economic size. The net of FDI inflows as percentage of GDP is the highest in Jordan, Lebanon, Bahrain, Sudan and it's the lowest in Kuwait, Yemen, Iran and Syria. High inflation represents a major challenge for resource-poor countries which import significant amounts of food and fuel and do not have the financial resources of resource-rich countries in region. The rate of inflation as measured by the percentage change in the consumer price is the highest in Turkey, Sudan, Iran and it's the lowest in Bahrain, Morocco, Libya and Saudi Arabia.

Table 1.2 show the estimated score of quality of institutions for MENA countries (calculated as average over the period 1996-2011) in six dimensions: 1) voice and accountability; 2) political stability and absence of violence; 3) government effectiveness; 4) regulatory quality; 5) rule of law and; 6) control of corruption. The six governance indicators are measured into units ranging from about -2,5 to 2,5, with higher values corresponding to better governance.

Table1.1. MENA economies outlook, Averages 1996 - 2011

country	Net FDI Inflow (% GDP)	Net FDI Outflow (% GDP)	GDP (Billions US$)	GDP per Capita (US$)	Inflation (% CPI)	Population (Millions)	Fuel & Ores (% Exports)
Algeria	1.25	0.23	96	2782	4.54	33	97
Bahrain	6.79	3.28	15	15962	1.10	0.9	82
Egypt	2.82	0.43	120	1655	7.22	70	46
Jordan	8.12	0.18	18	2577	3.83	5.2	16
Iran	0.88	-	210	3024	16.74	69	81
Kuwait	0.23	6.29	73	30066	3.18	2.2	92
Lebanon	7.24	2.90	23	6113	2.59	3.7	10
Libya	1.25	2.96	42	7580	1.85	5.5	96
Morocco	1.66	0.49	59	1928	1.77	30	13
Oman	1.98	0.73	32	12645	3.11	2.4	82
Qatar	3.56	3.47	53	46598	4.46	0.9	86
Saudi Arabia	2.52	0.33	310	12698	1.98	23	89
Sudan	6.55	-	29	719	20.91	31	63
Syria	0.90	-	23	1307	3.99	18	61
Tunisia	3.06	-	31	3092	3.35	9.9	13
Turkey	1.37	0.26	420	6240	35.37	66	6
UAE	2.38	-	170	36350	3.89	4.6	80
Yemen	0.29	0.23	16	787	11.38	19	94

Source: Online World Bank Development Indicators database (2014).

Table1.2. MENA World Governance Indicators, Averages 1996-2011

Country	VA	GE	PS	RQ	RL	CC	INSTIT
Algeria	-1.09	-0.68	-1.47	-0.74	-0.85	-0.68	-0.92
Bahrain	-0.89	0.51	-0.17	0.70	0.47	0.33	0.16
Egypt	-0.99	-0.31	-0.55	-0.32	-0.05	-0.44	-0.44
Jordan	-0.54	0.13	-0.28	0.25	0.33	0.13	0.00
Iran	-1.22	-0.51	-0.93	-1.54	-0.75	-0.60	-0.93
Kuwait	-0.38	0.06	0.31	0.15	0.59	0.70	0.24
Lebanon	-0.41	-0.22	-1.09	-0.22	-0.41	-0.59	-0.49
Libya	-1.73	-1.04	-0.14	-1.52	-0.92	-0.93	-1.04
Morocco	-0.58	-0.10	-0.31	-0.15	-0.03	-0.10	-0.21
Oman	-0.82	0.40	0.84	0.37	0.58	0.43	0.30
Qatar	-0.62	0.55	0.95	0.24	0.59	0.81	0.42
Saudi Arabia	-1.59	-0.22	-0.23	-0.01	0.15	-0.28	-0.36
Sudan	-1.72	-1.22	-2.26	-1.33	-1.45	-1.17	-1.52
Syria	-1.58	-0.86	-0.37	-1.15	-0.48	-0.84	-0.88
Tunisia	-0.90	0.45	0.12	-0.04	0.00	0.00	-0.06
Turkey	-0.26	0.09	-0.93	0.28	0.01	-0.21	-0.17
UAE	-0.75	0.81	0.85	0.68	0.57	0.70	0.48
Yemen	-1.03	-0.85	-1.61	-0.67	-1.24	-0.85	-1.04
MENA	-0.95	-0.17	-0.40	-0.28	-0.16	-0.20	-0.36

Note: Values in this table are averages of Voice and Accountability (VA), Government Effectiveness (GE), Political stability (PS) Regulatory quality (RQ), Rule of law (RL) and Control of corruption (CC) for the period from 1996 to 2011.The overall institutional index (INSTIT) is calculated as the average values of the six world governance indicators.

As can be seen from table 2.1, the average score on quality of institutions in MENA region over the period 1996-2011 is below zero (-0.36) indicating that MENA overall performance in term of quality of institutions is very weak. The table also shows that, at country level, performance of MENA countries is heterogeneous, especially among the resource-rich countries. Some of the resource-rich countries such as Sudan, Libya, Yemen, Iran and Algeria perform poorly when compared to the other MENA countries in general. Other MENA resource-rich countries such as United Arab Emirates (UAE), Qatar, Oman, Kuwait and Bahrain are countries where institutions best performed. The performance of MENA resource-poor countries is also poor but in general (as group of countries), it's not worse than the performance of resource-rich countries.

1.6. Natural Resources and Groups of MENA Countries

One of the most important defining characteristics among MENA countries is the availability of natural resources. Some of MENA countries are endowed with natural resources (oil and gas in particular) while the other are not. These differences in the economic structural characteristics between MENA countries are expected to affect the diversity and performance of their economies. Therefore, it's important to distinguish between the two groups of countries.

In this research, we differentiate between the two distinct groups according to their natural resource export intensity (see table 1.1). Resource-poor countries comprise of countries where the share of the sum of minerals and oil in total merchandise exports (averaged over the period 1996-2011) are less than 50%. These countries are Egypt, Jordan, Lebanon, Morocco, Tunisia and Turkey. Resource-rich

countries consist of countries where the share of the sum of minerals and oil in total merchandise exports is more than 50%. These countries are Algeria, Bahrain, Iran, Kuwait, Libya, Qatar, Oman, Saudi Arabia, Syria, Sudan, UAE and Yemen.

1.7. FDI, Natural Resource and Dutch Disease Effect

In the economic literature, the Dutch disease (also named as resource curse in the long term) refers to the adverse effects of a natural resource boom on the manufacturing or other tradable sectors (see Corden and Neary 1982). Accordingly, the increase in revenue from the investments in natural resources will make a country's exchange rate higher compared to that of other countries (natural resource booming effects). Since the boom causes the domestic price level to increase, producers of tradable goods face higher production costs, which cause them to reduce their output. This makes exports in tradable sectors less competitive on world markets, and results in a loss of output and employment in other sectors (notably manufacturing).

The term "Dutch disease" originate from an economic crisis in the Netherland in the 1960s that caused by the findings of vast resource of gas in the North Sea. This new discovery of wealth cause inequality in the growth and development of economic sectors and make exports in manufacturing sectors less competitive on the world market. Another example of the same economic condition happened in the UK in the 1970s when the price of oil raised in the world market and it became economically more viable to invest in the oil extraction industry. At that time, the

exchange rate of the pound became higher against other currencies and the UK had become a net exporter of oil after it had previously been a net importer.

Before the 1980s, it was widely believed that natural resource abundance would enable developing countries to make the transition from underdevelopment to industrial stage, alike as it had done for countries such as Australia and the United States. However, this view now stands confronted by a number of studies (e.g. Corden and Neary 1982; Poelhekke and van der Ploeg 2010) that show the existence of a slower growth and poorer economic performance in natural resource rich countries. Recent studies suggest another explanation of the resource curse, that is, an abundance of natural resources leads to poorer governance and conflicts. It gives rise to governments that are less accountable to the people, have little incentive for institution upgrading, and fail to implement growth enhancing reforms. Higher corruption, more civil conflict, and erosion of social capital are some of the outcomes associated with this problem.

Understanding the FDI and natural resource relationship is important especially for MENA countries, many of which rely on exports of primary commodities. The lessons to be learned for policy-making are particularly valuable where the development of manufacturing sectors is necessary for economic growth and development. Table 1.3 presents statistics about the change in the economic structure of MENA countries during the period 2000-2010. As can be seen from this table, the effect of resource curse on the performance of MENA resource-rich countries is noticeable. Most of MENA oil-exporting countries such as Algeria, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, Sudan, UAE and Yemen have no export diversifications and still heavily depend on oil revenues and their manufacturing industry in decline or even not exist for some countries. In contrast,

MENA resource-poor countries have been successful in increasing the share of manufacturing exports in their total export. For instance, in some resource-poor countries such as Egypt, Morocco and Syria, the share of manufacturing exports have considerably increased while their shares of oil exports have declined over the same period.

Table1.3. Change in the structure of exports of MENA countries 2000-2010

Indicators	Merchandise Exports (Millions US$)		Food (% Of total)		Agricultural raw materials (% Of total)		Fuels (% Of total)		Ores and Metals (% Of total)		Manufactures (% Of total)	
Country	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010	2000	2010
Algeria	22,031	57,053	0	1	0	0	97	97	0	0	2	2
Bahrain	6,195	13,647	1	7	0	0	0	0	16	70	10	22
Egypt	5,276	26,438	8	17	5	3	42	30	4	6	38	43
Jordan	1,899	7,028	16	17	0	0	0	1	15	9	69	74
Iraq	20,603	52,800	1	0	0	0	97	99	0	0	0	0
Kuwait	19,436	67,014	0	0	0	0	94	93	0	0	4	6
Lebanon	715	5,021	20	15	2	1	0	0	7	11	71	64
Libya	13,380	47,400	1	-	0	-	93	-	0	-	7	-
Morocco	7,432	17,579	21	19	2	2	4	1	9	12	64	66
Oman	11,319	36,601	4	3	0	0	83	81	1	3	12	12
Qatar	11,594	62,000	0	0	0	0	91	73	0	0	9	5
Saudi Arabia	77,583	249,700	1	1	0	0	92	87	0	0	7	11
Sudan	1,807	11,443	17	6	5	1	69	92	0	0	8	0
Syria	4,634	13,500	9	22	5	1	76	39	1	4	8	33
Tunisia	5,850	16,427	9	8	1	1	12	14	2	2	77	76
Turkey	27,775	113,981	13	11	1	0	1	4	3	4	81	79
UAE	49,835	220,000	1	1	0	0	94	65	3	1	2	4
Yemen	4,079	8,700	2	6	0	0	97	92	0	0	0	2

Source: World Development Indicators (2012, p. 226-228)

1.8. Benefits and Costs of FDI to the Host Countries

FDI can bring with it many benefits and costs to the host countries and therefore, there is no straightforward answer to the question of the value of FDI to the host countries. However, especially for developing countries, it can be said that the benefits and cost of FDI differ from one country to another depending on several factors related to the host country's business environment conditions (political, economic and social conditions). Charles and Hill (2006, p.246-249) provide a review to the main benefits and costs of FDI to Nation- State. Accordingly, the main benefits of FDI for a host country arise from resource-transfer effects, employment effects, balance-of-payments effects, and effects on competition and economic growth. The main costs of FDI for a host country arise from possible adverse effects on competition within the host nation, adverse effects on the balance of payments, and the perceived loss of national sovereignty and autonomy. In the next section, we summarise the benefits and cost of FDI to the host countries according to their review as follows:

1.8.1. Benefits of FDI to the Host Country:

- FDI can contribute positively to the economic growth of the host country by providing financial capital that is not available for the host country's economy. Many of the multinational firms in regard to their large size and strong financial position usually have access to financial resources not available to host-country firms.

- FDI can be a way of technology transfer and can contribute positively to the economic development and human capital of the host county. Economic literature identifies technology transfers as perhaps the most important channel through which foreign corporate presence may produce positive externalities in the host developing economy. Many developing countries lack the innovation skills required to develop their own product and process technology.

- FDI can have positive direct and indirect effects on employment in the host country. Direct effects occur when a foreign firm hires a number of host-country residents. The indirect effects arise when jobs are created in local suppliers as a result of the investment (intra-industry activities) and when jobs are created because of increased local spending by employees of the foreign firm.

- FDI can enhance the host country's balance of payment in two ways. Firstly, by adding more financial capital to current account in which it can be used for domestic investment purposes. Secondly, by producing locally, FDI can serve the demand in the local market and substitute for the imports of goods and services.

1.8.2. Costs of FDI to the Host Country:

- FDI can have a direct adverse effect on the productivity and competitiveness of the local firms. Many of the developing countries that aim to attract FDI may be discouraged by the possible "crowding out" effect of their local firms. Since that foreign firms possess some technology superior to that of host country firms, there

is worry that domestic firms may not be able to compete at lower prices. Another possible negative effect is the difference in wages paid by foreign and domestic firms. Foreign firms may able to hire the best workers in the industry by paying higher wages, leaving only the low quality of workers at the domestic firms. These spillover negative effects are likely to be much concern in developing countries that have few large firms of their own, but not for industrialised countries. Unlike domestic firms, foreign firms that are part of large multinational organisation may be able to compensate (draw on funds generated elsewhere) for its costs in the host market. This, as result, may push local firms out of the market and allow the foreign firm to monopolize the market and raise prices above rival domestic firms.

- FDI can also have negative effects on a host country's balance of payments. There are two possible adverse effects of FDI on the balance of payment of the host country. First, the repatriated profits from the foreign subsidiary to its parent firm. As consequence, repatriated profits in foreign currency most result in greater balance of payments outflows than a similar project financed locally. A second concern arises when foreign firms import large number of their inputs from abroad, which results in a deficit in the current account of the host country’s balance of payments.

- Another possible disadvantage of FDI to the host country is the loss of national sovereignty and autonomy. Some developing countries may not allow for FDI because of the fear of losing economic independence. The greediness of some giant multinational companies has harmed the stability of many political regimes in developing countries and their involvement has triggered many of the regional conflicts in these countries.

Chapter 2

Main Theories of FDI

2.1. Introduction

In this chapter, we provide a review to the development of FDI theories and outline their contribution to our understanding of FDI phenomenon. The review commences with Stephen Hymer's seminal contribution to FDI theories and shows how other FDI theories were derived from his work. The chapter also reviews the classic FDI theories that give FDI its unique features as a process not only of transfer of capital, but also a transfer of the firm specific advantages such as technology and skills. The chapter also provides a review of the eclectic paradigm, (Dunning 1976) and how it links these classic FDI theories in one theoretical framework. Finally the chapter extend the review and discuss the contribution of Dunning (1993) and how he distinguishes between the different types of FDI according to their motivation to resource-seeking FDI, market-seeking FDI, efficiency-seeking FDI and strategic-seeking FDI.

2.2. Industrial Organisation Theory, (Hymer 1960)

Since the introduction of Stephen Hymer's contribution and industrial organisation theory, economists have tried to find key answers that can lead them to understand the motives of local companies to extend their production internationally. In regard to the earlier attempts that aimed to explain the post-war FDI phenomenon, the contribution of Hymer's thesis underlies the foundations to most theoretical attempts that aim to provide a better understanding of multinational production activities. In fact, the theory itself incorporates in its assumptions the origin of those theories that adopted the concept of market structure failure in their interpretation of the existence of the Multinational Enterprises (MNEs).

Hymer assumes that a firm's decision to invest abroad is a strategy to capitalise on certain capabilities not shared by other competitors in foreign countries (monopolistic advantages). This imperfection might occur in, firstly, goods markets such as product differentiation, brand names, special marketing skills or collusion in pricing. Secondly, it might be in factor markets such as special managerial skills, differences in access to capital markets and technology protected by patents. Thirdly, market failure can be reflected in the existence of internal or external economies of scale. Finally, market imperfection can be a result of government policies such as taxes, tariffs, interest rates, exchange rates, (Hood and Young 1979).

Dunning and Rugman (1985) assessed the work of Hymer and his interpretation of the existence of MNEs and market imperfection hypothesis. Accordingly, Hymer’s work failed to differentiate between two types of market failure. The structural type

(Bain 1956),[1] originates from the firm's ownership advantages that work as entry barriers for other competitors in the industry (monopolistic power), and the transactional type (Williamson 1975), which originate naturally (exogenous to the MNEs). The response of MNEs to the latter is to internalise the market and transact efficiently at a lower cost, (Dunning 1981). Cantwell (2000) argues that Hymer discusses the assumption behind why and how firms invest abroad; however, he does not focus on how firms can operate efficiently in foreign countries, including their use of advantages. Casson (1987) pointed out that Hymer failed to relate his theory of market imperfection to Coase's (1937) theory of the firm. In this view, Casson (1987) states that Hymer's work failed to realise the essence of the transaction cost theory to differentiate between the two types of market failure.

Although Hymer's work is 'seminal' for the further development of the International Business scholarship, it is not short of criticism. The most important one is the heavy focus on the Bain-type market imperfections and the relatively superficial treatment of transaction costs-related market imperfections based on the seminal work of Coase (1937) and later further developed by Williamson (1975). This criticism was a major debate in international scholarship. Dunning and Rugman (1985, p229) state that *"Hymer's dissertation is remarkably prescient in its identification of structural market failure, but that it somewhat overlooks the transaction-cost side of the literature''*. The authors support the view that Hymer' work fails to distinguish between the market failure-types of the specific advantages of MNEs.

Kindleberger (1969) extended the earlier work of the industrial organisation hypothesis by expressing the fact that those monopolistic advantages must be firm-

[1] *For more details see Bain, J. S. (1956), Barriers to new competition.*

specific and transferable within the firm's subsidiaries. He states that "*for direct investment to thrive there must be some imperfection in markets for goods or factors, including among the latter technology, or some interference in competition by government or by firms, which separates markets*", (Kindleberger 1969, p 13).

Knickerbocker's (1973) oligopolistic reaction theory interprets international production behaviour as a strategic reaction to the rival companies within the industry. In this view, multinational enterprises tend to follow the industry's leaders (the giant companies of the industry) in their moves to exploiting new markets as a defensive strategy in the long term. The reaction behaviour of the competitors can not only be in exploiting a new market; it can also be in acquiring competitive assets as a strategic policy of keeping their position in the industry.

Aliber (1970) explains the FDI phenomenon as a consequence of market imperfection in the financial market. Accordingly, capital flows as a consequence of the exchange rate change risk from countries with a stronger currency position as opposed to those with a weaker one. This would give foreign firms an advantage over local firms to capitalise their investment returns at a higher rate as a result of their ability to borrow at a lower rate from the international capital market. Critics of this theory argue that, although this view is compatible with the early post-war American dollar domination, it has no interpretation for the rise of Europe and Japanese MNEs.

2.3. Product Life Cycle Theory, (Vernon 1966)

The theory of Product Life Cycle (PLC) tries to explain the establishment of operations in a foreign country by integrating the theory of comparative costs (essentially the concept of comparative advantage) with the time and the location of the innovation of a new product; also, how the further stages of the production life cycle, maturity and standardisation affect the location choice of the MNEs. In this respect, PLC gave to the international business scholarship a dynamic location aspect, which was absent in the work of Hymer (1960).

It is important to note that, in the period in which the PLC was developed, the US was by far the country with the highest per capita income in the world and its production structure was characterised by high unit labour costs. The PLC theory, then, was limited to products that were targeting high-income consumers, or were covering a labour-saving need. The rationale for the choice of such products is the timing and the location of the innovation of such products in the US. This would happen, according to Vernon (1966), because innovation is inter alia a function of effective communication between the potential market and the potential suppliers, which is conditioned in Vernon's analysis by geographic proximity (national boundaries). Taking these into consideration, the PLC theory is characterised by the following stages:

- **Stage 1: New Product**

At the first stage, the product is targeting mainly the market of the home country, where the appropriate demand conditions exist. The product is still unstandardised

in terms of its final specification, which favours the establishment of the production facility in the home market, even if this will be comparatively disadvantaged over foreign locations. This is because of two reasons, which are related in the new and unstandardised nature of the product. The fact that the product is new makes cost considerations to be of relatively less importance in the production facility location decision of an individual firm, as it enjoys a first-mover advantage. The unstandardised nature of the product and the resulting frequent changes in the inputs makes effective communication (geographic proximity) of the manufacturer with other market participants (such as customers and suppliers) essential. During this stage, some demand from other high income foreign countries, as predicted by the Linder (1961) hypothesis, may occur, but this will be satisfied by exports.

- **Stage 2: Maturing Product**

  At this stage, an increase in the demand for the product and an increasing standardisation of the product, at least in terms of its general specifications, have important location implications. This is because of the initial importance of geographic proximity, due to the need of the producing firm for flexibility and swift communication with participants in the national market, is declining in importance, while cost considerations as a result of the declining uncertainty of the production operations gain more attention in comparison with Stage 1. The initial response of the firm at this phase is usually relocation from the industrial core of the home country to the lower-cost location in the periphery. The increase in demand, however, in other developed countries would cause the firm to consider setting up local production facilities in these countries. The decision-making process for setting up a facility abroad is complex; it includes not only comparative cost considerations, but also the level of the indigenous competition, patent protection,

as well as policy (tariff levels) and institutional (political situation) considerations. Once a production facility is established in a foreign developed country and given full exploitation of economies of scale, then cost considerations (mainly labour costs) increase in importance. In case the new production facility abroad offers a cost advantage in comparison with that in the home country, then exports to third countries may be substituted with exports from this new facility. In case transportation costs can be off-set by (labour) cost differences, the MNEs may substitute production in the home country with imports from abroad.

- **Stage 3: Standardised Product**

  At this advanced stage of the product life cycle, all its characteristics are fully standardised and competition is based mostly on the price considerations (high price elasticity of demand). The possibility of setting up a facility in less developed countries is increasing, according to other product characteristics and the nature of the value-add activities for its production. These include, except the level of labour input needed and price elasticity of demand, the need for the inputs or the services of related industries (repair services, for example); plus, if the product is of high value, that would make it possible to absorb the high transportation costs from exporting from geographically remote less developed countries. During this stage, imports in the home country from developed countries will be substituted with imports from less developed countries.

  With the PLC theory, Vernon (1966) devised a dynamic location feature, which explains the patterns of the internalisation of production in two ways:

- The hierarchy of economies is relevant in explaining international investment. The introduction and production of new products occurs in high-income countries (the U.S in the 50s and 60s); eventually, via FDI, they spread to the rest of the world in a hierarchical way, first to other developed countries and then to less developed countries.

- Not only is there a hierarchy in the location patterns of the internationalisation of the production, but Vernon (1966) implicitly provides a hierarchy of the strategic motives for FDI. First, FDI happens because of demand (market-seeking considerations) in developed countries; then, in the maturing stage of the PLC, cost considerations become more important and rationalisation of the production in other than the home country happens because of efficiency-seeking motivations.

In the standardised stage of the PLC, there is a maximisation of the cost considerations; production moves to less developed countries clearly because of efficiency-seeking motivations, as the local market is relatively small. In addition to the introduction of the dynamic location and motivation feature in the theory of the internalisation of production, the PLC theory provided some insight into the source (innovation capacity) of the rise of the firm-specific advantages that enable a firm to become MNEs, an issue that was ignored by Hymer. Vernon (1966), however, in contrast with Hymer, did not proceed explicitly in an analysis of market imperfections, (Dunning and Lundan 2008).

Although the PLC theory offered the aforementioned useful insights in explaining the internationalisation of production, it is a theory that reflects the specific time period of the 50s and 60s and is quite ethnocentric as it focuses only on US MNEs. The focus in this specific time period and the US reflects the horizontal orientation of the US MNEs, where innovation was a result of efforts in the home country, while foreign subsidiaries were concentrated in the manufacturing process. Subsequent changes in the world economy as a result of increasing levels of globalisation and an increase in the sources of technological innovation make the PLC theory less relevant, (Cantwell 1995). Subsidiaries are no longer just a replica of the manufacturing units of the home country; instead, because of technological and market heterogeneity, they are actively involved in the innovation efforts of the MNEs by tapping into the technology pool of the host countries. They are, therefore, engaged in the development of new products that reflect local/regional market tastes, (Papanastassiou and Pearce 1999).

2.4. Internalisation Theory, (Buckley and Casson 1976)

The internalisation approach sought to explain the internalisation of production and the existence of the MNEs through a transaction cost theoretical framework based on the seminal work of Coase (1937). The main hypothesis of this theory is that the MNEs come into existence when a firm internalises operations across national borders in order to overcome transaction cost-related failures in the market for intermediate products. The internalisation theory was established by Buckley and Casson (1976) in their seminal work "*The Future of the Multinational Enterprise*''. While earlier approaches to the international business scholarship such as Hymer

(1960) and Vernon (1966) sought to analyse the internationalisation of production as a separate issue from the existence of the firm, Buckley and Casson (1976) saw the question of the existence of the MNEs as a derivative of the question of the existence of the firm in general: "*The solution to an intellectual problem – in this case explaining the international expansion of a firm - is sometimes best achieved not by breaking down the problem into a set of smaller issues, but rather by raising the level of generality and subsuming the problem under a wider issue – in this case, the rationale for the firm itself,*'' (Buckley and Casson 2009, p1570).

Coase (1937) sought to explain the existence and the size of a firm by analysing how the choice is made between the alternatives of allocating resources by using the price mechanism as against internalising transactions within the firm: "*In view of the fact that while economists treat the price mechanism as a co-ordinating instrument, they also admit the co-ordinating function of the 'entrepreneur', it is surely important to enquire why co-ordination is the work of the price mechanism in one case and of the entrepreneur in another*.'' Given the assumption that the most cost-effective one out of these two alternatives is more desirable in each transaction, a firm would choose to internalise such transactions as long as the marginal internalisation cost of each additional transaction is lower than the cost of using the price mechanism. The costs involved in using the price mechanism are related to the discovery of relative prices, the costs of negotiating a contract for each transaction and the costs arising by uncertainty in the case of long-term contracts. The marginal costs of internalisation, though, are increasing with each additional internalised transaction (that is, they are increasing as the size of the firm is increasing). This is because a bigger firm faces higher organisation costs,

increased possibility of misallocation of resources and a potential increase in the supply price of production factors, (Coase 1937).

Buckley and Casson (1976) developed the internalisation theory by building on Coase (1937) and simply viewing the MNEs as a special case of a firm that has internalised (by owning and controlling) operations across national borders. The internalisation theory of the MNEs, as developed by Buckley and Casson (1976), rests on three principles (Buckley and Casson 2009):

• *The boundaries of a firm are set at the margin, where the benefits of further internalisation of markets are just offset by the costs.*

• *Firms seek out the least cost location for each activity, taking its linkages with other activities into account.*

• *The firm's profitability, and the dynamics of its growth, is based on a continued process of innovation stemming from R&D.*

Internalisation occurs because of market failure in the intermediate product markets. Market failure in the intermediate input markets lead to a vertical integrated MNEs (vertical FDI), while market failures in the intermediate output markets lead to the horizontally integrated MNEs (horizontal FDI), (Caves 1996; Buckley and Casson 2009).

Restricting the first general preposition to individual cases of these different failures in the market of intermediate products, Buckley and Casson (1976) identified several industries in which internalisation is very likely to happen. These industries, according to Casson (1982), are R&D intensive industries, natural resources-seeking industries and industries where government interventions

encourage transfer pricing. The main focus of Buckley and Casson (1976), however, is the special case of forward integration from R&D to production. This reflects the view of the scholars in that the most important intermediate product for a firm is knowledge which, as an intangible good, has been ignored in most of the neoclassical theories, (Buckley and Casson 2009). They asserted that the benefits of internalising knowledge are substantial as the market for knowledge is inhibited by market failures, such as asymmetric information and buyer uncertainty. In this way, Buckley and Casson (1976) distinguished *knowledge internalisation* from *operational internalisation*. The latter reflected gains from internalising intermediate products moving to different stages of production, while the former reflected the gains from internalising knowledge produced by R&D efforts, (Buckely and Casson 2009).

However, the determinants of the geographic distribution of the production, which is of primary importance for explaining FDI, cannot be explained by the internalisation without using location theory. The second preposition of the internalisation approach states that a firm would choose the least cost location to internalise its operations. It is important to note that the first and the second preposition are interdependent, as choice of internalisation is a comparative cost (benefit) analysis between the cost (benefit) of internalising across national borders and the costs (benefits) of servicing a foreign market by other means (exporting or licensing). Location elements, then, such as transport costs, communication costs, government intervention, economies of scale, relative differences in the availability of non-tradable products, political risk and others are important in estimating the costs and benefits of internalisation ,(Buckley 1988).

The relative importance of these factors, however, is determined by the industry and the specific business activity that the MNEs are considering to internalise, (Buckley and Casson 2009). For example, FDI in primary metals extraction will place relatively more emphasis on the availability of these natural resources in a country rather than on the local standards of living. The third preposition, that the firm's profitability along with the dynamics of its growth (and so the growth of its multi-nationality) will be based on a continued process of innovation, puts into context the view of the internalisation approach about the firm-specific advantages. These are that, according to early approaches to international business, such as Hymer (1960), they enable a firm to compete in a foreign market by overcoming the disadvantage of operating in a different political and economic environment than in the firm's home country.

According to the internalisation approach, such a firm-specific advantage is not a necessary condition for a firm to engage in FDI. This is because, according to Buckley (1988), in a dynamic context the act of internalising a market represents a strategic move to increase profitability, which places a firm at an advantage in relation to its competitors. The most important criticisms of the internalisation theory are related to (1) the preposition that firm-specific advantages are not relevant in explaining the internationalisation of production; and (2) the microeconomic nature of the approach, which results in an examination of FDI mainly through the lenses of the MNEs, while the locational aspects of the host countries are not analysed in an appropriate level of detail.

2.5. International Production Theory, (Dunning 1976)

The eclectic paradigm theory introduced by John Dunning in 1976 was in fact, an analytical framework that sought to find the interdependency between the earlier theoretical attempts of international production. The three components of the OLI[2] model, introduced as a coherent framework, help economists to explain and understand the behaviour of MNEs investing abroad. The essence of the OLI paradigm originates from its capability to encompass the main important factors that influence the MNEs decision to be internationally engaged in value added activities. Accordingly, there are three conditions that must be satisfied in order for firms to engage in FDI.

First, a firm should possess comparative advantages, or an ownership advantages factor (O) over competitive firms, which arise from their possession of some intangible assets, such as property rights of a particular technology, firm size and monopoly power, access to raw material or cheap finance. Second, it must be beneficial for the firm to exploit these advantages internally, Internalisation factor (I), rather than to sell or licence them to other firms. Thirdly, it must be more beneficial for the firm to combine those advantages with some input factors abroad, location factor (L); otherwise, exporting will be more appropriate, (Imad A. Moosa 2002).

The ownership advantages (O) provide an answer to the question of why some firms extend their production internationally. The concept of ownership advantages was an important tenet in Dunning's OLI model, since it draws the line with other

[2] *OLI stands for "ownership", "location" and "internalisation", which are the three types of advantages perceived by the eclectic framework as necessary for the generation of FDI.*

international production theories. Dunning asserts that the monopolistic ownership advantage, as represented by Hymer, is a necessary factor which gives a firm its unique characteristic. However, it is not sufficient to explain why firms would expand their production internationally when other ways of serving the foreign markets, such as export or licensing, can be applied (see Table 2.1).

Table 2.1. The eclectic approach, (Dunning 1981)

Advantages / Entry Form	Ownership Advantages (O)	Internalisation Advantage (I)	Location Advantages (L)
Licensing	Yes	No	No
Export	Yes	Yes	No
FDI	Yes	Yes	Yes

Source: Dunning (1981)

Dunning (1988) decomposes the ownership advantages into two types of advantages, namely asset ownership advantages (Oa) and transaction ownership advantages (Ot). The Oa advantages are those that originate from the possession of the firm to particular intangible assets (property rights). The Ot advantage is that those kinds of advantages originate from the firm's hierarchical organisation structures in internalising intermediate products (common governance), especially knowledge, in the face of transactional market failure (Hennart 1982; Rugman 1980).

The Internalisation advantages (I) provide an answer to the question as to how market transactions can be done efficiently without any other additional costs. Accordingly, foreign firms acquire their ownership advantages from their ability to keep control over their organisational dispersion across borders. In order for firms to transact efficiently at a lower cost, they mostly exploit these advantages internally. The location advantages (L) provide an answer to the question of where firms choose to locate their production. Accordingly, firms need to combine their ownership advantages with a set of location factors. These factors include trade barriers, host government policies, relative market costs and the size of the market. However, there are many criticisms to the model, as John Dunning himself said. The model is criticised as being too general and has limited powers to explain only specific modes of international production, (Dunning 1988). Also, Kojima (1978) criticises the eclectic model as being too micro (business-oriented) and claims it is of limited use for policy formation by home or host countries. Vernon (1985) claimed that the model is static and not able to explain the change in the process of international production. Dunning (1988) asserts that, after a decade from its inception, the eclectic paradigm is still a useful and powerful general framework, not only for analysing and explaining the economics of international production, but is also a useful tool for many organisational issues related to MNEs activities.

2.6. FDI Motives, (Dunning 1993)

Dunning (1993) categorises multinational enterprise activities according to their motives into four types of FDI: (1) Resource Seeking FDI, (2) Market Seeking FDI, (3) Efficiency Seeking FDI and (4) Strategic Assets Seeking FDI.[3]

1. ***Resource Seeking FDI*****:** This type of FDI is motivated by the opportunity to take advantage of particular abundant natural resources at a lower cost than could be obtained in their home country. Dunning (1993) classified resource-seeking FDI into three types of FDI. First, those looking for abundant physical natural resources such as fossil fuels, metals, industrial minerals, and agriculture products. Second, those undertaken by manufacturing and services firms from developed countries into developing countries in order to take advantage of low labour costs. Third, those undertaken by firms who seek to take advantage of technological capability, management or marketing expertise and organisational skills.

2. ***Market Seeking FDI:*** This type of FDI undertaken by firms that invests in a particular country or region for the purpose of serving the markets in that country or region. There are four main factors that encourage firms to engage in such types of FDI. The first factor is that their main suppliers have set foreign subsidiaries; as a result, they follow the suppliers' actions to maintain their business. The second reason is that the products need to be adapted to the taste and the culture needs of the local markets. The third reason is that serving the market from foreign subsidiaries can enable the firm to avoid high transaction costs of serving the markets from a distance. The fourth, and most important, reason is that setting up foreign production subsidiaries is part of global production and marketing strategy

[3] *See Dunning and Lundan (2008) for a detailed review.*

for the firm in order to have a physical presence with its rivals in the leading markets (defensive action).

3. Efficiency Seeking FDI: This type of FDI is undertaken by firms that operate in multi foreign locations in order to take advantage of the differences in factor endowment, institutional arrangements, demand pattern, economic policies and market structures across the boundaries. The main aims of efficiency-seeking FDI are to gain from the division of the market activities by rationalising the structure of existing based resource or market-seeking investments. Most efficiency-seeking FDI are characterised by being a risk-diversified investment and are promoted by the integration between markets.

4. Strategic Assets Seeking FDI: This type of FDI is motivated by the opportunity to sustain or promote their global competitiveness position by purchasing assets or shares of existing companies for long-term strategic objectives. Another possible explanation of strategic asset-seeking FDI is that foreign firms tend to weaken other competitors in the market by buying their assets in order to strength their own Ownership specific advantages. FDI strategic investments are most important for companies who aim to take such investment as a future strategy for restructuring their investments, or to diversify their investments.

2.7. Conclusion

There are several theories that have been put forward by the economists to explain FDI, but no single theory have been successful in explain the real motivations behind the different type of FDI. However, it can be said that most of these theories in some way or another sought to answer three fundamental questions: (1) why some firms but not others go abroad? (2) where MNEs chooses to locate their investment? (3) how MNEs chooses to operate in a foreign country? Dunning's OLI model has brought together these differing theories into a broadly recognised paradigm in which to investigate the determinants of FDI location. One feature of the model is that it allows for a variety of factors to be tested, depending on whether the focus is on ownership, location or internalization advantage. This thesis focus on the location aspect of OLI model according to which multinational firm invest in a foreign country in order to acquire advantages based on location.

Chapter 3

Literature Review

3.1. Introduction

This chapter provides empirical review of the factors that have been identified in the literature on FDI as main determinants. The chapter starts with a brief review of Dunning (1993) definitions of FDI motives followed by discussion of the recent studies that have been inspired by the latest development in the form of international economy and its implications for the location of FDI and MNEs activities. The chapter also provides a review of the main FDI determinant factors that have been often identified in the literature as an important location determinants, these factors are: the market size, infrastructure, openness to trade, macroeconomic instability, natural resources and the quality of institutions. In the final section, the review extended to includes studies that used firm-level FDI to investigate the effects of market and firm characteristic factors on the performance of firms in the host country.

3.2. Review of the Location Determinants of FDI

As mentioned in the previous chapter, Dunning (1993) defines three main types of FDI based on the motive behind the investment. Market-seeking FDI is that type of investment which aims to serve local markets by replicating their production facilities in the host country (horizontal FDI). Trade restrictions policies are to play important roles in a market-seeking FDI decision. For instance, imposing excessive restrictions on trade activities might encourage the foreign company to create subsidies in the host country in order to avoid high transaction costs (Tariff-Jumping FDI). Resource-seeking FDI is that type of investment which aims to take advantage of abundant production factors in the host countries. The availability of cheap labour and abundant natural resources such as oil and gas can be the only reason that motivates a foreign company to invest abroad. An efficiency-seeking FDI is that type of investment that takes advantages of economies of specialisation by locating its production chain activities in different locations in order to achieve the lowest cost of production (vertical FDI). Strategic-seeking FDI is that type of investment that takes advantages of access to advanced technologies and high skills and developed production capabilities. For instance, a good example of this type of FDI is the recent high profile acquisitions of Chinese car companies, such as the acquisitions of MG Rover by Chinese Nanjing Automobile Group Corporation.

In recent years, there have been many empirical studies that have investigated the location determinants of FDI inspired by the earlier contribution of the OLI model and its latest development. Dunning (1998) tried to trace back to the changing scenario in the international business and its implications for the location of FDI and MNEs activities over the past two decades. In his article ‘’*Location and the*

Multinational Enterprise: A Neglected Factor?'', he mentioned that *''many of the explanations of the 1970s and early 1980s need to be modified as firm-specific assets have become mobile across natural Boundaries''*. Dunning (2000) suggests that ''dynamising'' the OLI model and widening it to embrace asset-augmenting FDI and MNEs activity may still claim to be the dominant paradigm explaining the extent and pattern of the foreign value-added activities of firms in a globalising, knowledge-intensive and alliance-based market economy.

Dunning (2009) mentioned that the unfolding events of the 1990s and the changing geography of FDI were demanding a careful reassessment of the location (L) component of the OLI paradigm. The foremost challenge of this was the emergence and growth of asset-augmenting or competence-seeking MNEs activities, where it is predicated that firms will engage in FDI, or in cross-border alliances, not to exploit a particular set of O-specific advantages, but to access or acquire new ones. Nunnenkamp (2002) argues that there is a gap in the literature between globalisation-induced changes in international competition for FDI and recent empirical evidence on the relative importance of determinants of FDI in developing countries. The study demonstrates that traditional market-related determinants are still dominant factors in developing countries. Among non-traditional FDI determinants, only the availability of local skills has gained importance. The study also found that the tariff-jumping motive for FDI had lost much of its relevance well before globalisation became a more important issue. World Investment Report (1998) provides a valuable review to the main FDI determinants that can explain the differences in FDI inflows between countries and to determine why firms invest where they do. Accordingly, the principal determinants of the location of FDI are the policy framework, business facilitation measures and economic factors (see

table 3.1). The relative importance of different location-specific FDI determinants depends on the motive and type of investment, the industry in question, and the size and strategy of the investor. Different motives, for example, can translate into different location patterns depending on the investor's strategy.

Table 3.1. Host countries determinants of FDI, (WIR 1998)

Host country determinants	Type of FDI classified by motives of TNCs	Principal economic determinants in host countries
I. Policy framework for FDI • economic, political and social stability • rules regarding entry and operations • standards of treatment of foreign affiliates • policies on functioning and structure of markets (especially competition and M&A policies) • international agreements on FDI • privatization policy • trade policy (tariffs and NTBs) and coherence of FDI and trade policies • tax policy	A. Market-seeking	• market size and per capita income • market growth • access to regional and global markets • country-specific consumer preferences • structure of markets
II. Economic determinants	B. Resource/ asset-seeking	• raw materials • low-cost unskilled labour • skilled labour • technological, innovatory and other created assets (e.g. brand names), including as embodied in individuals, firms and clusters • physical infrastructure (ports, roads, power, telecommunication)
III. Business facilitation • investment promotion (including image-building and investment-generating activities and investment-facilitation services) • investment incentives • hassle costs (related to corruption, administrative efficiency, etc.) • social amenities (bilingual schools, quality of life, etc.) • after-investment services	C. Efficiency-seeking	• cost of resources and assets listed under B, adjusted for productivity for labour resources • other input costs, e.g. transport and communication costs to/from and within host economy and costs of other intermediate products • membership of a regional integration agreement conducive to the establishment of regional corporate networks

Source: World Investment Report (1998), trend and determinants

The main enabling framework for FDI consists of rules and regulations controlling entry and operations of foreign investors, standards of treatment of foreign affiliates and the functioning of markets. Complementing main FDI policies are other policies that affect foreign investors' locational decisions and the effectiveness of FDI policies. These include trade policy and privatization policy. Principal FDI policies are important because FDI will simply not take place where it is forbidden. However, changes in FDI policies have an asymmetric impact on the location of

FDI: changes in the direction of greater openness may allow firms to establish themselves in a particular location, but they do not guarantee this. In contrast, changes in the direction of less openness, especially if radical (e.g. nationalizations), will pretty much ensure a reduction in FDI, (WIR 1998).

In the literature on FDI, there are various studies that have looked similarly to the possible effects of these factors on FDI. However, empirical evidence on FD determinants still seems to be mixed and there is no consensus among these studies about the signs and magnitudes of these effects on FDI. The following section provides a review to the empirical literature on FDI determinants in developing countries with especial emphasis on the locational determinants of FDI that have been frequently tested in the previous empirical studies and their effects were found to be important for FDI.

3.2.1. Market Size

The size of the host country's market is traditionally considered to be one of the most important determinant factors, especially for market-seeking FDI. A larger market is a sign of greater demand for goods and services and, therefore, makes the host country more attractive for FDI. The importance of market size has been confirmed in many previous empirical studies, and the relationship between FDI and market size has proved to be positive and conclusive in most of these studies (e.g. Agarwal 1980; Wheeler and Mody 1992; Tsai 1994; Singh and Jun 1995; Hisarciklilar et al. 2006; Mottaleb et.al 2010).

Chakrabarti (2001) argue that the lack of a consensus over the conclusions reached by the wide range of empirical studies as to the relative importance and the direction of impact of the potential determinants of FDI can be explained, to some extent, in terms of the wide differences in perspectives, methodologies, sample-selection and analytical tools. He uses Extreme Bound Analysis to examine if any of the conclusions from the existing studies is robust to small changes in the conditioning information set. The Extreme Bound Analysis upholds the robustness of the correlation between FDI and market-size, as measured by per-capita GDP, but indicates that the relation between FDI and many of the controversial variables (tax, wage, openness, exchange rate, tariff, growth, and trade) are highly sensitive to small alterations in the conditioning information set. The author also studies the distribution of the estimated coefficients of the controversial explanatory variables to rank them in order of their likelihood of their being correlated with FDI.

Also, Mottaleb and Kalirajan (2010) investigate the determinants of FDI in developing countries based in the question of why some countries are successful in attracting FDI while others are not. The research results indicate that countries with larger GDP and high GDP growth rate, higher proportion of international trade and a business-friendly environment are more successful in attracting FDI. Hussain and Kimuli (2012) explore different factors responsible for variation in FDI to developing countries using a panel data of 57 low and lower middle income countries during the period between 2000 and 2009. This study found that market size is the most important determinant of foreign direct investment to developing countries. The role of market size has also been examined frequently in the context of gravity models (e.g. Bénassy-Quéré et al. 2007; Horstmann and Markusen 1992;

Brainard 1993; Helpman and Krugman 1985). The gravity model initially was developed to explain international trade and then was also applied to FDI. The general consensus accordingly is that FDI between two countries is positively driven by both countries' economic size and negatively deterred by the geographical distance between them.

3.2.2. Infrastructure

The availability of better quality infrastructure in the host country is considered to be vital for the chain of production as it facilitates the process of supply and distribution of production factors. Foreign investors prefer to locate their investment in countries that have a well-developed physical infrastructure such as net reliable telecommunications (e.g. telephones, internet and mobile phones), a power supply, paved roads, railways, and sea and air ports. A poor quality infrastructure, however, increases the cost of doing business abroad and, as a result, reduces the rate of return on investment. Wheeler and Mody (1992) find that infrastructure quality is an important variable for developing countries seeking to attract FDI from the United States, but is less important for developed countries that already have high quality infrastructure. Cheng and Kwan (2000) examine FDI locational determinants in in 29 Chinese regions from 1985 to 1995 and find that the density of roads in 29 Chinese regions has positive effects on FDI flows.

There are many indicators that have been used in the literature as proxies to measure the quality of infrastructure in the host country, such as roads and railway total network in km, air transport, freight in million ton-km, internet users, fixed lines and mobile phone subscribers per 100 people, etc. However, regarding the fact

that these indicators are highly correlated, none of them adequately capture the overall availability of infrastructure. For example, a country may have good-quality transportation, but poor-quality telecommunication. Asiedu (2002) mentioned that the number of telephones per 1,000 inhabitants is a standard measurement in the literature for infrastructure development; however, it falls short, because it only captures the availability and not the reliability of the infrastructure. The data collected from country-specific sources are always subject to reliability and comparability issues. These inconsistencies arise from a number of factors, including differences in classifications, definitions, and coverage across countries. Empirical studies that have investigated the effect of infrastructure on FDI inflows to MENA region are very few. This is mainly due to data on infrastructure that are mostly not available for MENA countries. One important empirical study is that conducted by Onyeiwu (2003) who examined the FDI determinants in MENA region in comparison to other developing countries. The study concludes that infrastructure has no significant impact on the inflows of FDI to MENA countries. The author argue that these insignificant impact can be explained by the fact that much of the FDI flows to MENA countries goes into natural-resource exploitation– sectors in which telephone lines (the proxy for infrastructure) are not important. Likewise, Mohamed and Sidiropoulos (2010) also examine FDI determinants in MENA countries and reach same conclusion.

3.2.3. Openness to Trade

The relationship between the host country's openness to trade and FDI inflows depends mainly on the motives of FDI in the host country. For example, in market-seeking FDI, the aim of the foreign firm is to serve the local market. Therefore,

higher restrictions on trade activities would promote the foreign firm to set up subsidies in order to reduce the cost of trade restrictions and tariff-jumping FDI. While in efficiency or resource-seeking FDI, the aim of the foreign firm is to exploit specialisation opportunities in different locations (production fragmentation). Therefore, this type of FDI is more concerned about trade cost, and as consequence; countries that pursue an open trade policy are more attracted to this type of investment, (Dunning 1993).

In the literature, most of the studies that focus on FDI determinants in developing countries have taken into account the importance of trade openness effects on FDI. Liargovas and Skandalis (2010) examined the importance of trade openness for attracting FDI inflows, using a sample of 36 developing economies for the period between 1990 and 2008. Trade openness is measured by using eight different indicators. The main empirical findings of the panel regression analysis reveal that, in the long run, trade openness contributes positively to the inflows of FDI in developing economies. Sekkat and Varoudakis (2005; 2007) empirically verify that during the 1990s, low level of trade and foreign exchange liberalization compared to East Asia and Latin America played a determinant role in the low level of total FDI in the MENA economies, particularly in manufacturing.

3.2.4. Macroeconomic Instability

In the literature, most of the studies concerns of FDI determinants in developing countries have taken into account the effects of macroeconomic instability as one of the important FDI determinants (e.g. Singh and Jun 1995; Noorbakhsh, Paloni and

Youssef 2001; Mottaleb and Kalirajan 2010). Macroeconomic instability involves high inflation rates; volatilise exchange rates and high external debts. Foreign investors prefer to invest in a more macroeconomic stable environment that reflects a less degree of uncertainty. The rate of inflation as measured by the change in consumer price index (CPI) is commonly used as a proxy for the level of macroeconomic instability. Asiedu (2005) analyses the flows of FDI into 22 Sub-Saharan countries over the period 1984 to 2000 and found the effect of inflation on FDI inflows was statistically significant with an expected negative sign. Chan and Gemayel (2004) study the risk investment associated with macroeconomic instability in order to give an explanation of the FDI level in the MENA region. The standard deviation of the risk guide provided by the International Risk Guide is used as a measure of economic, financial and political instability. The results indicate that, especially for the MENA, instability has a much stronger effect on FDI then the risk itself. Jallab et al. (2008) analyse the effect of FDI on economic growth in the MENA region for the period 1970 to 2008 using a dynamic panel data model (GMM and 2SLS estimators). Their findings show that positive impact of FDI on economic growth depends on macroeconomic stability in the region.

3.2.5. Natural Resources

Despite the fact that the availability of natural resources has been declining in their importance relative to other FDI determinants, this factor still plays important role in attracting FDI, especially in developing countries. FDI inflows to Africa have increased in all the major oil-producing countries (including Sudan) as well as in Egypt and South Africa, (WIR 2005). In developing countries, FDI in natural

resources may occur when resource-abundant countries lack the capital and the required technology for resource-extraction activities, (Dunning 1993).

Empirical evidence on FDI determinants show that some developing countries rich in natural resources were able to attract a large proportion of FDI inflows in comparison to other non-natural resource-abundant developing countries. This can be seen in the high demand of industrialising countries that sought to secure reliable sources of primary products, (Dunning 1993). Asiedu (2003) assesses the importance of natural resources and concludes that FDI to the Sub-Saharan African countries is still attracted by the availability of natural resources. Onyeiwu and Shrestha (2004) have examined FDI determinant in Africa and conclude that natural resource availability still plays an important role in attracting FDI to Africa. Through the last decade or so, resource-seeking FDI has once again boomed, induced by the increasing demand and rise of commodity prices for oil and minerals. As a consequence, the rising returns in this sector have attracted a wave of investment, (WIR 2007).

The effect of natural resources on FDI to MENA countries have also been investigated in the literature, however, there were only limited number have looked at their effect on FDI to MENA countries in particular. Mina (2007) examines the location determinants of FDI flows to the GCC countries (Bahrain, Kuwait, Qatar, Oman, Saudi Arabia and UAE) in the framework of the OLI paradigm. The study results indicate that, oil potential as measured by oil reserves and oil utilisation as measured by oil production have negative effects in the flows of FDI. However, the relative degree of oil utilisation to oil reserves has a positive influence on FDI.

Elfakhani and Mater (2007) investigate the determinants of FDI in the MENA countries over the period 1990-2000. They found that the main determinants of FDI flow to these countries are the previous year's FDI, country openness, the country membership to the World Trade Organization and being an oil-producing country.

3.2.6. Quality of Institutions

Institutions were defined by North (1990) as the rule of the game in a society. Institutions can be formal, like constitutions and law, or informal such as inherited customs. As suggested by North, institutions can affect economic activities through the operating environment of the investing firms. A poor quality business environment can increase the production costs and make the investment less profitable. The presence of excessive regulations and the long delays in setting up businesses impose additional costs to the production costs and reduce the competitiveness of the firms. In terms of FDI, the protection of property rights is the main priority for foreign investors. If property rights are not protected, FDI could face the risk of expropriation.

Kaufmann et al. (2010, p4) also define governance broadly as *''the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them''*.

Most empirical evidence from the literature on FDI determinants in developing countries support the view that the quality of institutions in the host country is a factor that can, to a greater extent, deter or promote FDI inflows (e.g. Wheeler and Mody 1992; Wei 2000; Globerman and Shapiro 2002; Benassy-Quere et al. 2007; Daniele and Marani 2007).

Shang Jin Wei (2000) studies the effect of corruption on FDI flows in a sample of 45 host countries. The study finds that an increase in the corruption level of the host country tends to reduce inward FDI. Globerman and Shapiro (2002) investigate the effects of governance infrastructure[4] on both inflows and outflows of a country's FDI. They found that good governance has a positive effect on both FDI inflows and outflows. The study also concludes that the host country's good governance infrastructure not only attracts FDI, but it also creates the conditions under which domestic multinational corporations emerge and invest abroad. Singh and Jun (1995) extend the earlier studies of the determinants of FDI in developing countries by empirically analysing qualitative variables such as political risk, business and macroeconomic conditions. Their findings indicate that all these factors are important determinant factors, especially for countries that have historically attracted high FDI flows.

There are only a few studies in the literature on FDI determinants that have looked to the relationship between democracy and FDI in the host country. Asiedu and

[4] *Governance infrastructure is defined as the combination of political, institutional and legal environment.*

Lien (2010) empirically examine the impact of democracy on FDI (using the interaction term between democracy and natural resources in the host country) for 112 resource-exporting and non-resource exporting developing countries and found that the effect of democracy on FDI is positive only for the non-resource exporting countries. They suggest that FDI flows to resource-exporting countries might be altered by the presence of natural resources in these countries. Bissoon (2012) investigates the role played by quality of institutions in FDI inflows to a selection of 45 developing countries in the African, Latin American and Asian regions. The results show that the level of FDI inflows is significantly related to the quality of institutions and this relationship is robust to the use of control variables and alternative indicators of governance as well as an aggregate governance index. Furthermore, the impact of an improvement in the overall institutional condition on the level FDI is more sizeable than progress made in individual institutional indicators due to the complementary nature of the different aspects of governance. More specifically, the results show that macroeconomic stability in terms of a less volatile inflation rate, efficient and less corrupt institutions, a good regulatory framework and political stability would have a positive impact on the FDI inflows of the countries in their sample.

Although the roles of institutions as determinant factors in developing countries have been widely investigated, MENA countries have received less attention in this matter. Vittorio and Ugo (2006) examine the quality of institutions in MENA countries relative to their inflows of FDI from the world. The authors used Kaufmann et al.'s (2005) governance indicators to perform a cross-sectional regression analysis for a sample of 129 countries in order to explain the relative

performance of FDI. The results indicate that the weak institutional framework in MENA countries does matter and show the relative disadvantages of MENA countries in attracting FDI. The study suggests that the MENA region is in need of deep institutional reform in order to advance their attractiveness for foreign investors. Jay Van Wyk and Lal (2010) investigate the factors that encourage and inhibit FDI flows to countries in the MENA region following what they called the ‘’New Institutional Economics approach’’. Their findings confirm that various economic and institutional factors are indeed significant determinants of FDI, including economic growth, current account deficits, trade openness and less restrictive business regulations.

To sum up, there is wide range of empirical studies that have alike try to identify what factor can explain the flow of FDI to particular countries. Among many of the suggested theoretical and empirical explanations for FDI phenomenon, the OLI model stands out to be a useful framework in providing explanation to most important factors that are associated with the location dimension of the OLI paradigm. Factor such as market size and growth, openness to trade, macroeconomic stability, the availability of infrastructure and good quality of institutions, natural resources and human capital have been frequently identified as important determinants for FDI especially for developing countries.

3.3. Review on FDI and Performance of Firms

In the literature on FDI, the question of whether FDI can contribute positively or negatively to the performance of domestic firms has been concern of many studies especially in developing countries that aim to advance their level of development and prosperity of their nations. Many policy makers in developing countries sought to attract FDI for various reasons. One of the most important reasons is that FDI can generate positive externalities to the domestic firms through transfer of technology know-how. Technology diffusion may occur from labor turnover as domestic employees move from foreign to domestic firms. These spill-overs, in the long term, may have important impacts on the productivity and development of host economy.

Early contributions such as Caves (1974), Dunning (1977) and Blomstrom (1986) indicated that foreign firms are more productive than their domestic counterparts and that the participation of foreign firms has a positive impact on domestic firms' performance. In the literature, there are large numbers of studies that have investigated the above question and reach similar conclusion. Javorcik (2004) also provides evidences consistent with the findings of the earlier studies about the positive productivity spillover from foreign to domestic firms. However, it has been also argued that the presence of foreign firms in the local market can have adverse effect on the performance of domestic firms and industry in general. As suggested by the industrial organisation theory, foreign firms tend to completely internalise their activities in order to maximise their profits and monopolise the market. This behaviour can limit the benefits of domestic firms in two ways. A first, intensified competition can omit domestic firms from the market if technology gap between

foreign and domestic firms is too large. A second, low level of education in the host country can also limit hiring domestic employee resulting in very little spillovers to the local industry.

There are several studies suggesting that the effects of foreign presence are not always beneficial for domestic firms. For instance, Aitken and Harrison (1999) used a panel of more than 4000 Venezuelan firms and found that foreign ownership negatively affect the productivity of wholly domestically owned firms in the same industry . Konings (2000) also found a negative spillover from foreign to domestic firms in Bulgaria and Romania, and no and no spillovers in Poland. Haddad and Harrison (1994) employ a unique firm-level dataset to test for spillovers in the Moroccan manufacturing sector and found that the dispersion of productivity is smaller in sectors with more foreign firms. Their results show that firms with some foreign ownership exhibit higher level of overall multi-factor productivity. However, the rate of growth of productivity is higher for their wholly domestically-owned firms.

Competition is also considered to be an important factor that can affect the performance of firms in the host country. The entrance of foreign firms into the local market can increase product market competition with domestic firms and its effects can be either positive or negative on the performance of the local industry. On one hand, increasing competition between foreign and domestic firms may force domestic firms to improve the efficiency of their production process in order to keep their position in the market, (Blomstrom and Kokko 1998). On the other hand, competition can also have a negative effect on domestic firms by limiting their market share and economy of scales benefits. Foreign firms that possess superior technology advantage over domestic firms may able to divert demand for domestic

inputs to imported inputs, which means that the local supplier firms are not able to benefit from potential economics of scale, (Aitken and Harrison 1999). This negative effect believed to be a major obstacle in some developing countries because of wide technology gap between the foreign investing firms and domestic firms.

One of the most important factors in market structure and firm performance is the relative size and the number of firms in the industry. Firms expected to exercise more market power if there are only few firms in the industry or they are large in their size relatively to the size of other firms. Another view about the role of firm size on the structure of the market is that large firms may have more difficulty to restructure themselves than smaller firms; however, they may have preferential access to financing which may as result promote their capacity to restructure. Empirical evidence about the relationship between size of the firm and its performance are not conclusive. Some studies have shown that larger firms are more productive than smaller ones due to factors such as better access to technology, managerial skills, finance, and learning (Castany et al. 2005; Pagés 2010). At the other extreme, the flexible, non-hierarchical structure of small firms can give these firms a productivity advantage, (Geroski 1998; Tybout 2000).

Performance of firms can also be identified based on other important factors related to the investment climate conditions. Recent studies concerns firm level FDI has incorporate investment climate obstacles as location factors and evaluates their importance to the entry of foreign firms into the local market. The variables that jointly define the investment climate include factors such as infrastructure, access to finance, education of labor, government regulations, political stability, role of law and corruption. Dethier et al. (2010) provide a valuable survey to the recent

literature which examines the impact of the business climate on productivity and growth in developing countries using World Bank enterprise surveys. Accordingly, the literature that has analysed this data provides evidence that a good business climate favours growth by encouraging investment and higher productivity. The authors state their motivation for their review ‘’*by explaining why a disaggregated, firm-level analysis of the relationship between enterprise performance and business climate—as opposed to a more macro-aggregate analysis—is important to gaining insights into these issues’’* (Dethier et al. 2010, p 258).

There are many difficulties have been identified in the literature as an obstacles that can hinder to great extent the performance and growth of firms in developing countries. For instance, access to finance, technology level, education of employees, government regulations are all considered to be determinant factors that can affect the performance of firms especially in developing countries. One of the most severe constraints for the performance of firms and growth in developing countries is the availability and reliability of good electricity sources. Many industrial firms in these countries have suffered various degrees of poor quality in the electricity services. The problem with electricity in developing countries is mainly associated with infrastructure development. The power sector in most of these countries remains underdeveloped and, therefore, disruption in the electricity supply is often expected. Moyo (2012) examines the impact of power disruptions on firm productivity in the manufacturing sector in Nigeria and found that power outage variables (measured as hours per day without power and percentage of output lost due to power disruptions) have a negative and significant effect on productivity, particularly on small firms. Unreliable electricity supplies are a major constraint to private sector development in MENA countries. According to the

World Bank survey data, over 50% of firms operating in MENA region identifying such deficits as major obstacle for the productivity and growth of their firms. The survey also reveal that MENA experiences more power outages, and with longer durations, than any other region in the world.

The availability of financial resources is considered to be an important aspect of a firm's performance in developing countries. Access to finance is needed to ensure flexibility in resource allocation and to reduce the impact of cash flow problems. Hericourt and Poncet (2009) assess the role played by FDI in alleviating domestic firms' credit constraints. The results confirm that the development of cross-border relationships with foreign firms helps private domestic firms to bypass both the financial and legal obstacles that they face at home. Excessive government regulations are also expected to hinder the performance and growth of firms. However, in developing countries, excessive government regulations can be associated with informal payments that often come in the form of bribes to secure infrastructure services such as telephone, electricity and water connections. Hallward-Driemeier et al. (2006) investigate the relationship between investment climate and economic growth using firm-level data on 1,500 firms in five big Chinese cities. The results indicate that many of the excessive sets of regulations are associated indirectly with corruption and infrastructure in the form of informal payments for inspectors to get things done.

Empirical studies on MENA countries are scant and there were only few studies that have used firm level data to investigate the impact of foreign ownership on the performance of domestic firms and industries (see Atyias, 2011 for wider review). Ben Naceur et al. (2007) examine the financial and operating performance of 95 newly privatized firms in four MENA countries namely, Egypt, Morocco, Tunisia,

and Turkey during the period 1990 to 2001. The results show that these firms experienced significant increases in profitability and operating efficiency, and significant declines in employment and leverage. Gurbuz and Aybars (2010) explore how the financial performance of the companies listed on the Istanbul stock exchange is affected by foreign ownership. The results of their study indicate that foreign ownership improves firm financial performance in Turkey up to a certain level, beyond which additional ownership by the foreigners does not add to firm profitability.

The availability of educated and skilled workers is very important for firm and industry performance especially for developing countries. Access to skilled labour facilitates the connection to regional and global value chains, as lead firms often expect suppliers to meet international quality standards. Firms may find it difficult to grow or to remain competitive because they are unable to fill jobs that require workers who have the right knowledge and skills (ASTD 2012). O'Sullivan et al. (2011) indicate that there is a persistent gap between the skills acquired at university and the requirements of business in MENA countries, while firms often refer to the lack of suitable skills as an important constraint to hiring. Achy and Sekkat (2010) used a sample of 664 large, medium- and small-sized firms covering seven industries in Morocco to investigate whether the difference in their attitudes toward investment in human and physical capital explains their difference in terms of job creation. The results support that such investment allows firms to create jobs, and this is robust to the inclusion of various additional explanatory variables, firm size and the industry coverage of the sample. The results also show that investment in training and new machinery is creating jobs mainly in the textile, garment and leather industries. These are precisely the most important industries in Morocco in

terms of employment. The results suggest, that training offered by a firm to its workers and investment in new machinery could be a good complement to governments efforts to reduce unemployment. Corruption also reported as major obstacle for growth in most of the firms surveyed in the MENA region, with firms reporting that informal payments are conventional often to smooth frequent inspections from authorities.

Furthermore, In the MENA region, the availability of financial sources considered to be one of the biggest obstacles for the performance and growth of firms in the region. Most of the firms surveyed by the World Bank reported credit constraint as one of the biggest obstacles for a firm's performance and growth. Achy et al. (2009) points out that access to finance is one of the major financial constraints affecting the performance of manufacturing firms in Morocco. Small firms tend to increase their debt instead of opening their capital to outside investors, while larger firms seem to rely much more on their retained earnings for their long-term financial needs. Corruption also identified as one of the biggest obstacles for performance and growth of firms in MENA region. O'Sullivan et al. (2011) indicate that fighting corruption and strengthening the rule of law are essential for economic growth and development in the MENA region. They mentioned also that cronyism, or granting contracts based on personal relationships to a privileged few, may distort market competition and prevent government efficiency.

To summarise our review, there is a wide range of studies concern the relationship between FDI and performance of firms. Most of these studies support the view that the presence of foreign firms in one way or another can be beneficial to the overall industry in the host country. Developing countries however, do not benefit from FDI equally and their benefits depend mainly on the host country's economic and

institutional factors. Recent studies suggest that there is a systematic pattern where various host industry and host country characteristics influence the benefits from FDI. These benefits seem to be larger in countries and industries where the educational level of the local labour force is higher, where local competition is stronger, and where the host country has better economic and institutional conditions. Furthermore, our review to the literature of FDI and performance of firms indicate that there is scarcity in studies concern MENA countries at micro level. Most of FDI studies on MENA countries have been conducted at macro level. Scarcity of research at micro level is often associated with the difficulty of obtaining enough firm level data (see Atyias, 2011). However, in recent years, firm level data become available for some MENA countries and researchers start to make use of it. The World Bank Enterprise Survey database is a valuable source of firms level data however, there is no much studies have employed such data for research in MENA countries. The World Bank Enterprise Survey is a firm-level survey data set that includes structural variables related to size of the firm, ownership, competition and also business environment variables such as , electricity outages, financial constraints, education of labour and quality of institutions. Therefore, one of the aims of this thesis is to go beyond previous studies and provide new evidences on the impacts of FDI on the performance of firms in MENA region using a unique firm level survey data.

Chapter 4

Gravity Model in Trade and Investment

4.1. Theoretical Development of the Gravity Model

The theoretical background of the gravity model has been derived initially from physical science (Newton's law of gravitys) and then applied in international trade and investment. The model has been empirically successful; however, the theoretical foundations for the model are a subject of some dispute. An earlier application of the gravity model in trade was conducted by Tinbergen (1962), Poyhonen (1963) and then Linnemann (1966). They observed that exports are positively affected by income of the trading countries, while the distance between the countries is likely to affect exports negatively. Accordingly, the flow of bilateral trade can be explained by the following specification:

$$PX_{ij} = \beta_0 (Y_i)^{\beta_1} (Y_j)^{\beta_2} (D_{ij})^{\beta_3} (A_{ij})^{\beta_4} u_{ij}$$

Where, PX_{ij} is the value of trade from country *i* to country *j*, Y_i, Y_j is the value of GDP for countries *i* and *j*, D_{ij} is the geographical distance between the economic centre of countries *i* and *j*, A_{ij} is other factors that aid or resist the trade flow between countries *i* and *j*, and u_{ij} is the distributed error term with E ($ln\ u_{ij}$) =0.

In the literature of international trade, the gravity model has been used to test hypotheses deeply rooted in pure economic theories of trade. For instance, the standard hypothesis of the Heckscher-Ohlin trade model that prices of traded goods are the same all over the world has, proved to be inconsistent due to the presence of the so-called ‘’border effects’’, in order to account for these border effects, the prices of traded goods need to differ for each country.

Anderson (1979) provides the first attempt to derive a theoretical basis for the gravity model based on constant-elasticity-of-substitution (CES). The model assumed that goods are differentiated by country of origin and consumers have preferences defined over all the differentiated products. This assumption would imply that, a country will consume at least some of every good from every country. All goods are tradable, all countries trade and, in equilibrium, national income is the sum of home and foreign demand for the unique good that each country produces.

Bergstrand (1985) argues that the gravity model is application of a model of trade based on the monopolistic competition theory developed by Paul Krugman (1980). Accordingly, identical countries trade differentiated goods because consumers have variety in their preferences. Therefore, models with monopolistic competition overcome the undesirable feature of Armington models whereby goods are

differentiated by location of production as assumed. Deardorff (1995) derived the gravity equation from the Heckscher-Ohlin model with firstly, frictionless trade and identical preferences, where random choice of trading partners by consumers and producers is assumed and secondly with trade impediments assuming unequal factor prices. Deardorff' work proved that gravity equation characterizes many models and can be justified from standard trade theories.

Feenstra et al. (2001) also argues that a gravity-type equation can arise from a wide range of models, though they have subtly different implications for the coefficient estimates, depending on whether goods are homogenous or differentiated and whether or not there are barriers to entry. The study empirical work for differentiated goods provides results consistent with the theoretical predictions of the monopolistic-competition model (reciprocal-dumping model) with free entry. Homogenous goods are described by a model national (Armington) product differentiation or by a reciprocal dumping model with barriers to entry.

4.2. Anderson–van Wincoop Gravity Equation (2003)

The contribution of Anderson and van Wincoop (2003) was particularly important for estimating the trade cost effects. They show that controlling for relative trade costs is crucial for a well-specified gravity model. Theoretically, their results show that bilateral trade is determined by relative trade costs. This means the propensity of the importing country j to import from the exporting country i is determined by the importing country's trade cost toward the exporting country relative to its overall "resistance" to imports and to the average "resistance" facing the exporting country in "multilateral trade-resistance" terms. McCallum (1995) analyses the

trade patterns between Canadian provinces and U.S. states. His findings reveal that Canadian provinces trade more than 20 times as much among each other than Canadian provinces and U.S. states do. This phenomenon is often described as the border puzzle since country borders seem to have a significant effect on trade patterns between countries.

Anderson and van Wincoop (2003) show that in a context of world with variety of goods differentiated by the country of origin, a well-specified theoretically gravity equation can be specified as following:

$$x_{ij} = \frac{yi\ yj}{y}\left(\frac{t_{ij}}{\pi_i P_j}\right)^{1-\sigma}$$

Where Y is the world GDP, Yi and Yj is the GDP of countries i and j respectively, tij (one plus the tariff equivalent of overall trade costs) is the cost in country j of importing a good from country i, $\sigma > 1$ is the elasticity of substitution, and **Π**i and Pj is the exporter and importer ease of market access or country i's outward and country j's inward *multilateral resistance* terms.

In the linear form of the gravity equation, other determinant geographical factors such as common language, adjacency and colonial history were added to the model to capture the information costs. The linear gravity model estimated by Anderson and van Wincoop can be described as follows:

$$lnx_{ij} = k + lny_i + lny_j + (1-\sigma)\rho\ lnd_{ij} + (1-\sigma)lnb_{ij} + (1-\sigma)lnP_i +$$

$(1-\sigma)lnP_j + \epsilon_{ij}$

Where x_{ij} is the value of exports from country i to country j, y_i and y_j are the income (GDP) of each country, d_{ij} is the bilateral distance between country i and country j, b_{ij} is a dummy variable for shared borders. P_i and P_j are the multilateral resistance terms.

Anderson and Van Wincoop (2004) investigate the effects of trade costs on the pattern of trade across countries. Their survey results indicate that poor countries face even higher trade costs and there is a lot of variation across countries and across goods within countries. The structural gravity model as exposited and extended in their survey offers the potential for theoretically consistent and more precise estimates of key implicit trade costs. They argue that the extensions of existing gravity models, better treatment of aggregation and endogeneity problems, and better estimates of substitution elasticities are all likely to improve our understanding of trade costs.

Santos Silva and Tenreyro (2006) argue that the standard empirical methods used to estimate log linear gravity equations are inappropriate because of the presence of heteroskedasticity. An additional problem of log-linearisation is that it is incompatible with the existence of zeroes in trade data, which led to several unsatisfactory solutions, including truncation of the sample by elimination of zero-trade pairs and further nonlinear transformations of the dependent variable. Instead, the authors propose a simple Poisson pseudo-maximum-likelihood method and assess its performance using Monte Carlo simulations. The study found that, in the presence of heteroskedasticity, the standard methods can severely bias the estimated coefficients, casting doubt on previous empirical findings. For instance, in both the

traditional and Anderson–van Wincoop specifications of the gravity equation, OLS estimation exaggerates the role of geographical proximity and colonial ties.

Theoretical and empirical studies that concern the role of firm heterogeneity and trade have generated new insights for the gravity equation by underlining a distinction between the extensive margin (the measure of exporting firms) and the intensive margin (average exports conditional on exporting). Bernard et al. (2007) uses a basic gravity equation to examine whether the effect of distance on bilateral trade operates through the extensive margin (the number of firms and the number of products) or the intensive margin (value per product per firm). He decomposes the aggregate value of US exports to a particular destination into three factors: the contribution of the number of firms exporting to the destination; the number of products exported to the destination; and the average value of exports per product per firm. By decompose the aggregate value of US exports into three components (exporting firms, exported products and average of exports per product per firm), Bernard et al estimate gravity equations for the aggregate value of exports and each of these three components. The findings suggest that aggregate trade relationships are heavily influenced by extensive-margin adjustments both in terms of the number of destinations and the number of exported products.

Chaney (2008) introduces firm heterogeneity to the gravity model by expanding Melitz's[5] gravity model and introduces fixed export costs and adjustments on the extensive margin in a simple model of international trade. The main finding of this paper is that the elasticity of substitution has opposite effects on each margin. A higher elasticity makes the intensive margin more sensitive to changes in trade barriers, whereas it makes the extensive margin less sensitive.

[5] *Melitz (2003) pioneered the firm-level heterogeneity theory (firms face fixed and variable costs of exporting).*

Helpman et al. (2008) argues that standard specifications of the gravity equation impose symmetry that is inconsistent with the data and that this too biases the estimates. They develop a theoretical trade model that predicts positive as well as zero trade flows between countries and use the theory to derive estimation procedures that exploit the information contained in data sets of trading and non-trading countries. Their developed model yields a generalised gravity equation that accounts for the self-selection of firms into export markets and their impact on trade volumes. The empirical work proposes a two stage estimation procedure that uses an equation for selection into trade partners in the first stage and a trade flow equation in the second. The study results show that traditional estimates are biased and that most of the bias is due not to selection but rather due to the omission of the extensive margin.

Lawless (2010) utilises a data from the US Census Bureau, detailing exports and numbers of exporting firms from the US to 156 destination markets, to decompose total exports into number of firms and average export sales per firm. Lawless' analysis goes beyond Bernard et al. (2007) work in two important respects. Firstly, Lawless extends the extensive and intensive margin regressions by adding more variables such as common language, influences of internal geography, and infrastructure. Secondly, Lawless show how these results can be interpreted in the context of a standard heterogeneous firms model of exporting by using a simplified version of the Melitz (2003) model to show how various factors will affect the two margins.

Unlike the popular gravity work of Anderson and van Wincoop (2003), which feature homogeneous firms and no extensive margin, Lawless results strongly confirm the predictions of the Melitz theoretical framework. Furthermore, the results

indicate that only size of the market and some proxies for communications infrastructure had a robustly significant effect on the intensive margin, with these variables having negative effects. To the extent that these communications networks can reduce the fixed costs associated with trade, these results are also consistent with the Meltiz model.

Chen and Novy (2011) derived a micro-founded measure of bilateral trade integration by modelling disaggregated trade flows at the industry level using gravity framework pioneered by Anderson and van Wincoop (2003) with heterogeneous trade costs and heterogeneous elasticities of substitution across industries. The authors show that their trade integration measure is also consistent with other classes of models including the Ricardian model by Eaton and Kortum (2002) and recent heterogeneous firms' models. The empirical work in this study based on data for 163 manufacturing industries across the European Union for the years 1999 to 2003. The results from the empirical application of the model indicate that a substantial degree of heterogeneity across industries both for the substitution elasticities and the degree of trade integration. For instance, trade integration appears particularly low for industries characterized by high transportation costs. In contrast, trade costs appear to be not important for some of the high-tech industries. The results also indicate that trade integration is also severely hampered by policy factors, in particular Technical Barriers to Trade and in transparent public procurement procedures. For public policy the study findings suggest that gains from improved international trade integration are possible especially through the elimination of Technical Barriers to Trade.

4.3. Empirical Applications of the Gravity Model

Since the earlier application of the gravity model in trade by Tinbergen (1962), Poyhonen (1963) and Linnemann (1966), the gravity model has been widely used as an analytical tool for explaining flows of international trade. The application of the gravity model has shown significant empirical robustness and explanatory power for describing trade flows and investment. However, the empirical application of the gravity model have often been faced with estimation problems such as the issue of the presence of heteroskedasticity in trade data or the existence of zero flows, which make the estimation of the logarithm unfeasible.

Matyas (1997) argues that all gravity type models used to predict the effects of regional blocks such as APEC, MECOSUR and NAFTA are miss-specified from an econometric point of view. He then demonstrates empirically how this lead to the incorrect interpretation of the trading blocs dummy and improper economic inference. Egger and Pfaffermayr (2003) argue that the proper specification of a panel gravity model should include main (exporter, importer, and time) as well as time invariant exporter-by-importer (bilateral) interaction effects. Using a panel of bilateral exports for 11 APEC countries over the period 1982–1998, their empirical analysis suggest that a two-way model is preferable, since bilateral interaction terms account for a large part of the variation in addition to the explanatory variables and the main effects (time, exporter and importer) and are highly significant. Choosing a three-way formulation ignores relevant information and may cause an omitted variable bias. In that case, one may obtain wrong measures of the export and import propensities of countries. Moreover, the projection of

bilateral trade relations is misleading and gives imprecise forecasts with unnecessary large confidence intervals.

Anderson and Van Wincoop (2003) were the first to address the problem of heterogeneity between countries in the gravity model. To solve that problem, they introduce a new theoretical framework for the gravity equation that includes a theoretical specification for the multilateral resistance term. Carrere et al. (2004) uses a gravity model to assess ex-post regional trade agreements including 130 countries with panel data during the period 1962–1996. The estimation method of the gravity model were augmented with country-pairs dummies in order to takes into account the unobservable characteristics of trade partner countries and also the endogeneity of some of the explanatory variables. The study results show that regional agreements have generated a significant increase in trade between members, often at the expense of the rest of the world.

Stack (2009) evaluates the effect of European regional integration on trade using two types of gravity model (traditional and new trade gravity model) and a panel dataset of bilateral export flows from 12 EU countries to 20 OECD trading partners during the period 1992–2003. The estimation of the gravity models was conducted using several variants of the fixed effects models in order to allow for differing degrees of space and time heterogeneity. The results indicate that the coefficient estimates are plausible in sign and significance across all specifications. Focusing on the econometric properties of the gravity model, the preferred model constitutes the full effects design which allows for the greatest degree of heterogeneity. The positive and significant coefficient estimate of the EU dummy variable declines in magnitude as an increasing degree of heterogeneity is allowed in the model and becomes insignificant for the full effects model. Herrera (2013) argues that several

problems related with the empirical application of the gravity model of international trade still remain unsolved. The unobserved heterogeneity, the presence of heteroskedasticity in trade data or the existence of zero flows, which make the estimation of the logarithm unfeasible, are some of them. Herrera's study provides a survey of the most recent literature concerning the specification methods of the gravity equations and found that that the Heckman sample selection model performs better overall for the specification of gravity equation selected.

Antonucci and Manzocchi (2006) applied the gravity model to Turkey's trade flows over 1967-2001 to check whether this model fits Turkey's geographical pattern of trade in goods and assess whether Turkey already has a special trade relation with the EU, namely whether merchandise exchanges between the two parties exceed what the gravity approach predicts. Their main findings imply that: i) the gravity model provides a good fit of Turkey's trade patterns; and ii) despite the 1963 Association agreement, and the customs union launched in 1996, there is no evidence of additional trade between Turkey and the EU.

Ekanayake et al. (2010) use a gravity mode to analyses the trade creation and trade diversion effects of the regional trade agreements (RTAs) in Asia, and their effects on intra-regional trade flows using annual trade data for the period 1980-2009. The findings of their study are, for the most part, consistent with findings of previous studies on the Asian trade flows. The coefficients of real GDP, population, and distance had expected signs and magnitudes in all models estimated. Cheng and Wall (2005) compare various specifications of the gravity model of trade as nested versions of a general specification that uses bilateral country-pair fixed effects to control for heterogeneity. Their results show that the theoretical restrictions used to obtain them from the general model are not supported statistically. Because the

gravity model has become the “workhorse” baseline model for estimating the effects of international integration, this has important empirical implications. In particular, that, unless heterogeneity is accounted for correctly, gravity models can greatly overestimate the effects of integration on the volume of trade.

De Mello-Sampayo (2009) argues that competing-destinations formulation of the gravity model ensues from the fact that unlike the classical version, this approach explicitly acknowledges the interdependence of the flows between a set of alternative locations, i.e. country-recipients are competing for FDI. In order to test for this hypothesis, she empirically examines a range of theoretical hypotheses about the determinants of FDI location in a panel data regression framework. The results of the estimation of a gravity model lend support to the proximity-concentration and internalization hypotheses. Also, the fact that FDI has been found to be decreasing in the competition posed by alternative locations is suggestive of the superiority of the competing-destinations version of the gravity equation over its classical formulation.

Kleinert and Toubal (2010) provide theoretical underpinnings of the gravity equation applied to the analysis of sales of foreign affiliates of multinational firms. The authors argue that the success of the gravity equation results from the fact that it can be derived from various theoretical models. They illustrate their point by deriving a gravity equation from three different models of multinational firms. Using data on real affiliate sales, they show empirically how the gravity equation can nevertheless be used to discriminate between the different theoretical models.

Zwinkels and Beugelsdijk (2010) argue that, against the background of its increased popularity and data availability, a range of commonly made econometric mistakes

have recently been discussed in the literature, mostly pertaining to the (omitted) characteristics of countries or country pairs in gravity models. The study concentrates on the possible non-stationarity of both the dependent variable (trade or FDI flows) and of one or more of the explanatory variables. They empirically show that there is indeed a problem with the non-stationarity of variables commonly used in gravity equations, not correcting for this yields overestimated results and, as consequence, they propose an effective solution for this problem.

Theoretically, the use of the gravity model in explaining FDI flows is supported by the most well-known Dunning eclectic paradigm. Accordingly, the market size and the proximity of markets are considered to be fundamental and influencing factors for FDI decisions. Most of the previous studies concerning FDI determinants have included them as explanatory factors and conclude that there is a robust relationship between the volume of FDI and the size of the host market, (Agarwal 1980; Wheeler and Mody 1992).

Grosse and Trevino (1996) examine the determinants of FDI flows to the US by country of origin of investment over the period 1980 to 1992 using a gravity model framework. The study results indicate that the main significant positive influences are the home country's exports to the US and the home country market size. Significant negative influences include the home country's imports from the US, the cultural and geographic distances of the home country from the US, and the exchange rate. Stone and Jeon (1999) used applied the general form of the gravity equation from Anderson (1979) to analysis the bilateral FDI flows for the years 1987-1993 within the Asia-Pacific region. The study results showed that FDI flows in the region were mainly driven by market size and income in the home country rather than factors in the host country.

Benassy-Quere et al. (2007) use a gravity model to study the impact of institutional quality on bilateral FDI flows between 14 OCED countries and 42 developing countries. Their results indicate that public efficiency in a broad sense is a major determinant of inward FDI. This includes tax systems, simplicity to create a company, lack of corruption, transparency, contract law, security of property rights, efficiency of justice and prudential standards. Also, the extent of competition is shown to be of importance in this study, although capital concentration in both the source and the destination country has a positive impact on FDI.

The application of the gravity model on trade and investment in developing countries is vast in number, however; among these studies, there are only few studies that examine the determinant of trade and investment in the context of Intra-MENA trade and FDI. Limam and Abdalla (1989) investigate the determinants of intra-Arab trade over the period 1984 to 1995 using a gravity model and sectorial panel data at three levels: total commodity trade, non-oil commodity trade, and commodity trade classified according to the SITC one digit level. The estimation results show that inter-Arab trade is positively affected by the size of the trading countries and also by whether they are members of either GCC or AMU. Transportation costs (measured by physical distance in KM) and political factors are found to be important deterrents to inter-Arab trade.

Al-Atrash and Yousef (2000) estimates a gravity model using maximum likelihood (Tobit) estimator to address the issue of whether intra-Arab trade is too little. The authors used a dataset consists of 18 Arab countries and 43 other countries that represent over 90 percent of the exports and imports of the Arab world over the period 1995 to 1997. The study results suggest that intra-Arab trade and Arab trade with the rest of the world are lower than what would be predicted by the gravity

equation, suggesting considerable scope for regional - as well as multilateral - integration. The results also suggest that intra-GCC and intra-Maghreb trade are relatively low while the Mashreq countries exhibit a higher level of intra-group trade.

Bolbol and Fatheldin (2005) developed augmented gravity model to investigate empirically the determinants of intra-Arab exports and FDI during the 1997-2003 period. The model was estimated with two data sets, one for trade among the Arab countries and one for trade with their major world trading partners. The results show that the basic variables of the gravity model carry the expected sign. However, with income elasticities at less than one, Arab exports seem to be characterized by limited product differentiation. Dummies involving the GCC FDI with each of the Arab sub-region blocks Mashreq and Maghreb were found to be positive and significant, reflecting the ‘’deep pockets” of GCC investors.

Abdalmoulah and Laabas (2007) studied the location determinants of intraregional Arab FDI using an augmented gravity model based on both standard gravity variables such as distance, borders, income and population of both sending and receiving countries. The dataset used in this study consist of a panel data of 17 Arab countries covering 10 annual periods 1998 to 2007.The authors argue that better treatment for zero in their dataset is to keep the log linearization while keeping zero flows in the data by using the ‘’inverse hyperbolic sine function’’[6] which is equivalent to the log function and in the same time defined for zero. The specification of the gravity model augmented with institutional variables to account for the role of quality of institutions in the home countries on FDI as well as with

[6] *The inverse hyperbolic sine function is defined as follows* $Sinh^{-1} = ln\left[x + (1 + x^2)^{1/2}\right]$

other dummy such as GCC sender dummy to account for the effects of rich oil countries as the driver force for intraregional Arab FDI. The study concludes that interregional Arab FDI is mainly determined by both total wealth (total GDP) of both home and host countries and inversely deterred by the average individual income (GDP per capita income) and population. The results also indicate that bilateral FDI flows are likely to be larger between neighbours, having already well-established trade movements. Empirical evidence on quality of institutions as measured by the World Bank governance indicators shows that political stability and control of corruption are negatively affecting intraregional Arab FDI flows.

Elafif (2008) also uses a gravity model and a panel data fixed effects to analysis the determinants of Intra-Arab FDI during the period 1985 to 2005. The empirical results support the argument that intra-Arab FDI increases with both the GDP of the h*ome* country and the per-capita GDP of the h*ost* country. Political stability also found to plays an important role, however sub-regional union through the Gulf Cooperation Council (GCC) or Arab Maghreb Union (AMU) represents a significant obstacle to intra region FDI flows. Alafif explained that if the host country is a member of the GCC or AMU, its opportunity to receive more Arab FDI decreases due to the intra-preferential treatment between members of the relevant sub-regional union. Ekanayake et al. (2009) analysed the intra-regional trade and investment flows in the MENA region using the augmented fixed effects gravity model and panel data over the period 1980 to 2006. The results show that all the gravity model main variables yield their expected signs. The coefficients of per capita GDP, population, and distance had expected signs and magnitudes in all models estimated which confirms the results of previous studies.

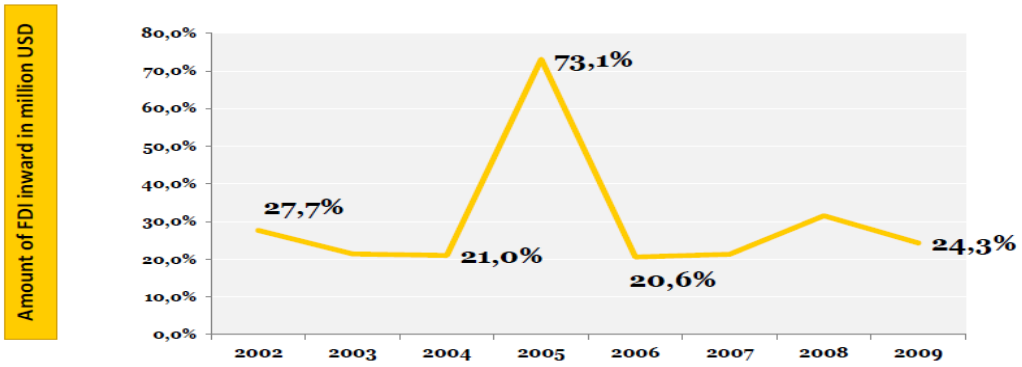
CHAPTER 5

Determinants of Intra-MENA FDI

5.1. Introduction

One of the most significant features of FDI flows to MENA region is the growing importance of investment within the region (see figure 5.1). Intra-MENA FDI inflows on average represent more than one third of the total FDI to the region (Chauvin 2013). In resource-poor countries such as Jordan, Lebanon, Egypt, Morocco and Syria, Intra-MENA FDI flows provide much of the needed capital. Potential growth of investment within the MENA region is considered very important given the fact that most MENA countries are geographically and culturally linked. Driven by the massive surpluses in oil exporting countries during the last decade, intra-MENA FDI has been and is likely to continue to be one of the main sources of investment in the region. This surge in oil prices since the late 1990s and the growing accumulated revenues has encouraged local investors in MENA rich oil exporting countries to take advantages of proximity in terms of the geographical, cultural and institutional distance and invest within the region.

Figure 5.1. Intra-MENA FDI in percentage of total FDI from the World to MENA



Source: MENA-OECD Investment Programme

This growth in intra-MENA FDI has been also driven by other important factors such as opportunities for privatization and infrastructure development projects in the region. For instance, some of the largest FDI projects in the last decade within the MENA region have been offered by countries such as Tunisia, Morocco and Egypt to invest locally in telecommunications and transportation sectors. Likewise, capital investments within the region have been also exploited through different form of portfolio investment. These include a wide range of (typically) Arab gulf based investment funds that are active in infrastructure, energy or real estate projects (see, Globalization and Regional Integration in the Arab Countries, UNCTAD 2008).

In the literature on FDI determinants, there are only few studies that have investigated FDI determinants within MENA region. Most previous empirical studies on FDI to the region were conducted on total country FDI inflows. This scarcity in the number of studies on intra-MENA FDI is mainly attributed to the lack of bilateral FDI data available on MENA countries. However, in recent years, data on MENA countries become available for researchers and easily accessible

through websites. The Arab Investment and Export Credit Guarantee Corporation is a joint-Arab agency encompassing all Arab countries and provides bilateral FDI data between MENA countries.

The aim of this study is to use such data and investigates empirically what factors determine the flow of FDI between MENA countries using a gravity model. The use of the gravity model in this study is particularly important because examining this question in the context of the gravity model can enhance our understanding about the roles played by the geographical factors in explaining the level of FDI within the region. Furthermore, the study also aims to investigate the question of the whether the determinants of Intra-MENA FDI differ between the resource-poor and resource-rich countries. MENA region comprise a set of countries that are economically and institutionally diverse, examining this question in the context of the gravity model can enhance our understanding about whether the determinants of bilateral FDI inflows within the MENA region differ between the two groups of countries.

The remainder of the chapter is organized as follows. Section 2 describes the data and variables used in this study. Sections 3 and 4 discuss the specification and estimations of the gravity model. Sections 5 and 6 present the empirical results and conclusion.

5.2. Data and Variables

The FDI data used in this study is a bilateral FDI inflow between MENA countries during the period 1998-2011. The countries sample included in this study consists of 17 home (sender) countries, namely Algeria, Bahrain, Egypt, Iraq, Kuwait,

Jordan, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, UAE, Yemen, and 15 host (recipient) countries, which are the same home countries exclude Iraq and Kuwait. The total number of observations is 3360 (16x15x14). Table 5.1 provides information about the variables used in this study, their data sources and their expected signs.

Table 5.1. Description of the variables, sources and their expected signs

Name of the variable	Description	Data source	Expected sign
LN FDI	The log of FDI inflows in Millions of US$ at current prices.	The Arab Investment and Export Credit Guarantee Corporation website	Dependent Variable
LN GDP*i*	The log of GDP of the home country at purchasing power parity and in current US$.	World Bank Development Indicators	+
LN GDP*j*	The log of GDP of the host country at purchasing power parity and in current US$.	World Bank Development Indicators	+
LN WDIST*ij*	The log of weighted geographical distance between capital cities of the home and host countries.	CEPII website	-
CONTIG*ij*	A dummy variable equal to one if the home and host countries share same border or zero otherwise.	CEPII website	+
COMLANG20*ij*	A dummy variable equal to one if the home and host countries share same second language (spoken by 20% of the country' population) or zero otherwise.	CEPII website	+
BITS*ij*	A dummy variable equal to one if the home and host country have bilateral investment treaties agreements or zero otherwise.	UNCTAD website	+
NATEXP*j*	The percentage of fuel and ores exports in the host country' total exports.	World Bank Development Indicators	-
INFLACPI*j*	Annual percentage change in the consumer price index of the host country.	World Bank Development Indicators	-
TRADE*j*	The sum of exports and imports of the host country divided by the value of GDP, all in current US$.	World Bank Development Indicators	+
LN INTERNET*j*	The log of internet users per 100 peoples of the host country.	World Bank Development Indicators	+
INSTIT*j*	A composed index of the six world governance indicators of the host country.	World Bank Governance Indicators	+

Table 5.2 presents the descriptive statistics of the variables used in this study. The average value of the log of FDI is 5.45 percent and its standard deviation is 7.80 percent. Natural resource and openness to trade are the variables with the highest mean and standard deviation among the independent variables. The average value of natural resource is 53.49 percent and its standard deviation is 37.96 percent. The average value of openness to trade as percentage of GDP is 79.24 percent and its standard deviation is 35.45 percent.

Table 5.2. Data descriptive statistics

variable	Mean	St.Deviation	Minimum	Maximum	Obs
LN FDI	5.45	7.80	0	24.05	3360
LN GDP*i*	23.25	5.52	22.54	27.23	3360
LN GDP*j*	23.76	4.20	22.54	27.23	3360
LN WDIST*ij*	7.56	0.75	4.88	8.75	3360
CONTIG*ij*	0.16	0.37	0	1	3360
COMLANG20*ij*	0.07	0.25	0	1	3360
BITS*ij*	0.35	0.48	0	1	3360
NATEXP*j*	53.93	37.97	0	98.63	3360
INFLACPI*j*	3.89	4.93	-9.80	22.11	3360
TRADE*j*	79.24	35.45	0	175.96	3360
LN INTERNET*j*	1.71	1.94	-5.34	4.46	3360
INSTIT*j*	5.27	1.02	-2.01	1.86	3360

Table 5.3 presents the correlation matrix of the variables used in this study. As can be seen from the table, the correlations between the variables in our sample do not cause any serious multicollinearity problem. The highest level of correlations is between trade and institutions (0.60 percent). As primarily results, FDI positively correlated with the GDPs of the home and host countries, common borders and bilateral investment treaties dummies, inflation, and negatively to the variables distance, the natural resource, trade, internet users and institutions.

Table 5.3. Correlation Matrix

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
(1)	1											
(2)	0.06*	1										
(3)	0.10*	-0.02	1									
(4)	-0.15*	0.04*	0.04*	1								
(5)	0.16*	0.00	0.01	-0.44*	1							
(6)	0.06*	0.06*	0.05*	-0.10*	0.07*	1						
(7)	0.07*	0.06*	-0.03	0.13*	-0.17*	0.08*	1					
(8)	-0.05*	0.01	0.10*	-0.02	0.06*	-0.15*	-0.19*	1				
(9)	0.09*	0.03*	-0.12*	0.04*	-0.02	-0.05*	0.08*	0.24*	1			
(10)	-0.07*	0.04*	0.18*	-0.14*	-0.04*	-0.04*	0.02	-0.09*	-0.19*	1		
(11)	-0.05*	0.05*	0.01	-0.11*	-0.01	0.01	0.17*	-0.06*	-0.05*	0.42*	1	
(12)	-0.14*	-0.01	0.21*	-0.14*	-0.03*	0.01	0.00	-0.11*	-0.38*	0.60*	0.50*	1

Note: *Indicate significant at 5%. (1) LN FDI (2) LN GDPi (3) LN GDPj (4) LN WDISTij (5) CONTIGij (6) COMLANG20ij (7) BITSij (8) NATEXPj (9) INFLACPIj (10) TRADEj(11) LN INTERNETj (12) INSTITj.

The ***dependent variable*** used in this study is bilateral FDI inflows in millions of US$. The description of the ***independent variables*** summarised in the following section (I refer to chapter three for a wider review on the related literature and the variables use).

1. **Economic size:** In the literature on gravity model, the GDPs of both home and host country is often incorporated in the model as proxy for the effects of economic size on FDI between them (e.g. Helpman and Krugman 1985; Bergstrand 1990; Anderson and Van Wincoop 2003; Grosse and Trevino 1996; Bénassy-Quéré et al. 2007). The GDP of the home country present the potential of the home country to invest in the host country (push factor), while the GDP of the host country present the capacity of the host country to absorb these investments (pull factor). In this study, we follow the gravity model literature and assess for the effect of economic size on FDI using GDPs of the home and the host countries in US$ and at

purchasing power parity basis. The expected effect of economic size of both home and host country on FDI between MENA countries is to be positive

2. **Geographical and cultural distance:** The effects of geographical and cultural factors on FDI are frequently used in the literature on gravity model. The increase in the physical and cultural distance between countries tends to increase the cost of transport and information between them. In this study, we use a weighted measure of physical distance as provided by the CEPII[7] database. This measure of physical distance is based on the bilateral distances in KM between the biggest cities in the home and host country, the inter-city distances being weighted by the share of the city in the overall country's population. Also, we test for the importance of other related geographical and cultural factors, such as common borders and common language (French and English being spoken by at least 20% of the total population). The effect of each factor investigated using a dummy variable equal to one if both countries share the same borders, language or zero otherwise. The expected effect of physical distance on FDI is negative while the expected effects of common borders and language are to be positive.

3. **Bilateral investment treaties:** The effect of bilateral investment treaties (BITs) on FDI has been widely investigated in FDI literature for both developing and developed countries (e.g. Egger and Pfaffermayr 2004; Neumayer and Spess 2005; Tobin and Rose-Ackerman 2006). The majority of these studies confirm the positive effect of BITs on FDI. The increase of FDI between countries through BITs is a common goal for most policy makers in developing countries. The

[7] *CEPII is a French research centre.*

existence of BITs between countries helps to protect private investment in the partner countries and also supports the development of international law standards. Most MENA countries have signed BITs between them; however, most of these agreements have been signed with non-oil exporting countries. Empirical studies on the effect of BITs on FDI to MENA countries are very limited. To the best of our knowledge, there are only two studies that have looked to the effect of BITs on FDI in MENA region (Mina 2010; Laabas and Abdmoulah 2008). In this study, we test for the effect of BITs on FDI using a dummy variable equal to one if both home and host country have a BITs agreement signed and entered into force at particular year or zero otherwise. The expected effect of BITs on FDI is to be positive.

4. **Natural resource endowment:** The availability of natural resources considered to be one of most important location advantages that characterise the MENA region. However, MENA region comprise set of countries that economically diverse, and those resource poorer countries may be more successful in attracting FDI than resource rich countries can do. Since the resource curse literature documents adverse effects of natural resources on growth performance, one might expect a negative effect of natural resource endowments on non-resource FDI, (van der Ploeg and Poelhekke 2009). In this study, we assess for the effect of natural resource on FDI to in the host country using the share of the share of minerals and oil in total host country' exports as a measure of natural resource availability. The expected effect of natural resource on FDI is to be negative.

5. **Macroeconomic instability:** Inflation rate is commonly used as a proxy for the level of macroeconomic instability. High inflation and volatile inflation increases uncertainty and thus, leads to higher investment risk. Therefore, FDI will be discouraged by such conditions, (see Asiedu 2002; Onyeiwu 2003; Jallab et al. 2008; Mohamed and Sidiropoulos 2010). In this study, we assess for the effect of macroeconomic instability on FDI to the host country using the percentage change in the consumer price index (CPI). The expected effect of macroeconomic instability on FDI is to be negative.

6. **Openness to trade:** Theoretically, the relationship between openness to trade and FDI depends on whether FDI and trade are complements or substitutes. In the empirical literature on FDI determinants, recent evidence on the effect of trade on FDI in developing countries emphasise the importance of openness to international trade in attracting FDI, (Asiedu 2002; Sekat and Varoudakis 2004; Onyeiwu 2006; 2008; Mina 2007). In this study, we investigate the effect of openness to trade on FDI to the host country using trade as a share of GDP (the sum of the host country' exports and imports divided by the value of GDP). The expected effect of openness to international trade on FDI is to be positive.

7. **Quality of infrastructure:** The effect of quality of infrastructure on FDI is widely investigated in the literature of FDI determinants and their impacts shown to be important especially for developing countries (e.g. Wheeler and Mody 1992; Cheng and Kwan 2000; Asiedu 2002). However, in the case of MENA region, there is limited number of studies that have investigate their effect on FDI and the empirical evidence about their impact on FDI still ambiguous. For instance, Onyeiwu (2003)

investigates FDI determinants to MENA and developing countries and found that infrastructure have a positive significant impact on FDI to developing countries but not for MENA countries. Abdalmoulah and Laabas (2007) investigate FDI determinants between MENA countries using a gravity model and found that infrastructure have a negative significant impact of FDI. In this study, we assess for the effect of infrastructure on FDI to the host country using the log of internet users per 100 people as proxy for the availability of better quality of infrastructure. The expected effect of infrastructure on FDI is to be positive.

8. **Quality of institutions:** Poor quality institutions impose additional costs for FDI, such as the cost of dealing with corruption, bribes, excessive regulations, weak enforcement of law and also the low protection of property rights. Empirical evidence from the literature on FDI determinants show that the quality of institutions in the host country can indeed deter or promote their share of FDI (Wheeler and Mody 1992; Wei 1997; Globerman and Shapiro 2002; Bénassy-Quéré et al. 2007). There are a number of studies that have investigated FDI determinants in MENA region; however, there were only few of these studies that have extend their analysis by including the institutional effect. The World Bank Governance Indicators considered as a valuable source of institutional data. The correlations among these variables are very high because of a common underlying dimension. Therefore, constructing composed index of these variables can capture the overall effects of quality of institutions. In this study, we employ factor analysis technic and create a new variable called institutions to assess for the effect of the overall quality of institutions on FDI between MENA countries. The expected effect of quality of institutions on FDI is to be positive.

5.3. Specifications of the Gravity Model

In recent years, the gravity model has become one of the most successful analytical tools for estimating bilateral trade and FDI relations. Also, the use of panel econometric methods in estimating the gravity model has become popular in this field of research (see chapter four for more detailed review). An important advantage of using panel models is reducing the possibility of obtaining biased results (see Baltagi 2001). Matyas (1997) argued that the correct gravity specification is a three-way model. One dimension is time (reflecting the common business cycle) and the other two dimensions of group variables are time invariant export and import country effects.

In this study, we use a similar gravity specification to the one introduced by Matyas (1997) and control for the heterogeneity between countries in our sample using dummy variables for both sending and receiving countries. Implementing fixed effects using dummy variables enable us to assess the effects of time invariant variables (variables of interest) such as physical distance and common borders. The specification of the gravity model used in this study is outlined as follows:

$$\begin{aligned}\ln fdi_{ijt} = {} & \beta_0 + \beta_1 lngdp_{it} + \beta_2 lngdp_{jt} + \beta_3 lnwdist_{ij} + \beta_4 contig_{ij} \\ & + \beta_5 comlang20_{ij} + \beta_6 bits_{ijt} + \beta_7 natexp_{jt} + \beta_8 inflacpi_{jt} \\ & + \beta_9 trade_{ijt} + \beta_{10} lninternet_{tj} + \beta_{11} instit_{jt} + \alpha_i + \gamma_j \\ & + \theta_t + \varepsilon_{ijt}\end{aligned}$$

Where: $lnfdi_{ijt}$ is the log of FDI flows in millions of US$ from country *i* (home) to country *j* (host) at time *t*, $lngdp_{it}$ is the log of the GDP at purchasing power parity and in millions of US$ of country *i* at time *t*, $lngdp_{jt}$ is the log of GDP at purchasing power parity and in millions of US$ of country *j* at time *t*, $lndist_{ij}$ is the log of geographical weighted distance in KM between the capital cities of countries *i* and *j*, $contig_{ij}$ is a dummy equal to one if countries *i* and *j* share the same borders or zero otherwise, $comlang20_{ij}$ is a dummy equal to one if countries *i* and *j* share the same second language or zero otherwise, $bits_{ijt}$ is a dummy equal to one if countries *i* and *j* have a bilateral investment treaty agreements entered into force at time *t* or zero otherwise, $natexp_{jt}$ is the share of minerals and oil in total country' *j* exports, $inflacpi_{jt}$ is the inflation rate (defined as the percentage of change in the consumer price index) in country *j* at time *t*, $trade_{ijt}$ is the percentage of trade (as a share of GDP) of country *j* at time *t*, $lninternet_{tj}$ is the log of internet users per 100 people of country *j* at time *t*, $instit_{jt}$ is the score of the composed index of the six world governance indicators of country *j* at time *t*, α_i is a dummy for country *i*, γ_j is a dummy for country *j*, θ_t is a dummy for time effect and ε_{ijt} is disturbance term.

5.4. Estimations of the Gravity Model

The econometric specification of the gravity model plays an important role in determining the country-pairs specific effects on FDI. This is because an econometrically mis-specified gravity model can lead to biased estimates and an incorrect inference regarding the determinants of FDI. In the literature on FDI

determinants, there are several econometric methods that have been introduced in order to account for the heterogeneity between countries. However, many of these empirical specifications are likely to be biased due to omitted variable problems. In recent years, economists sought to address the problem of heterogeneity across countries in a panel gravity model by introducing several econometric models as the proper specification. (see chapter 3 for more detailed review).

The use of the ordinary least square (OLS) estimator assumes non-zero FDI flows between all pairs of countries, which is not the true case in practice as some country pairs do not exchange FDI with each other at all. The traditional way of handling such a problem is to delete all zero value in the dataset, or set these zeroes to be equal to a very small value that enables the log of the observations to be taken, (Linnemann 1966). However, the use of these techniques as a means of estimating the gravity model can severely bias the empirical results and lead to incorrect inferences. Especially when it comes to estimating the geographical and culture effects, omitting zeroes tends to reduce the estimated effects of these variables. Also, the added value of one constant can overestimate these effects and produce highly significant effects. To overcome this problematic flaw and also check for the validity of our results, we estimate the gravity model using to two different estimators, the ordinary least square (OLS) and the Probit. In the first estimation of the gravity model using OLS, we correct for the problem of missing values in FDI by taking the log of FDI plus one as a way of dealing with zeros. In the second estimation of the gravity model, we use the Probit estimator to predict for the missing value on FDI.

5.5. Empirical Results

Tables 5.4 and 5.5 present the regression results obtained from the panel fixed effects OLS and Probit gravity model estimated for MENA countries during the period 1998-2011. Columns 1 and 2 in each table present the regression results for the full sample of MENA countries, while columns 3 and 4 present the regression results for the sub-samples of MENA resource-poor and resource-rich countries respectively.

In order to check for the goodness of fit of the regressions produced by the OLS and Probit gravity model, we follow the Santos Silva and Tenreyro (2006) steps and conduct the misspecification RESET test (Ramsey 1969).The test is simply conducted by testing the significance of the additional regressor constructed as (xb)^2, where b is the vector of estimated parameters[8].The RESET tests results reported at the bottom of each table indicate that the Probit gravity model performed better than the OLS gravity model in explaining the variation in FDI. Accordingly, the *p*-values of the RESET test indicates that the hypothesis of the coefficient on the test variable (xb^2) is equal to zero (no omitted variables) is accepted in all the Probit gravity regressions only. However, we find no differences in the results in term of the corresponding signs and the significance of the explanatory variables in both models. The only difference in the results produced by the two models is that (as Santos Silva and Tenreyro (2006) mentioned in his paper) OLS tend to exaggerate the impacts of the estimated coefficients of the

[8] *Ramsey's RESET test of functional misspecification is intended to provide a simple indicator of evidence of nonlinearity. To implement it, one runs the regression and saves the fitted values of the dependent variable. Then, one adds the square of the fitted value to the regression specification and tests for the coefficient. If the t statistic for the coefficient is significant, this indicates that some kind of nonlinearity may be present.*

variables. As can be seen form the results presented in each table the magnitude of the coefficients impact on FDI is larger for the OLS gravity model but it indicates same sings with the Probit gravity model.

We begin our empirical analysis by exploring the performance of Intra-MENA FDI in the context of the gravity model. Column 1 in each table presents the result from the basic gravity model estimated for the full sample of MENA countries with fixed effects included in the model. The fixed effects implemented using dummies encoded for the year of FDI; sender country and receiver country (see Matyas 1997). Panel fixed effects regression model produce more robust results than pooled regression model as it takes into account the differences in the panel data structure and control for the unobserved heterogeneity between the host and home countries.

The results from the basic gravity model indicate that most of the traditional gravity variables are significant and carry the expected signs. The GDPs of both home and host countries have a positive and significant impact on bilateral FDI whereas geographic distance shows to have a negative impact on FDI. The effects of other gravity relevant factors such as common border, language and bilateral investment treaties dummies also show to have a positive and significant impact on FDI.

Column 2 presents the regression results from the augmented gravity model in which a set of economic and institutional variables added to the model. The results confirm the importance of the economic and institutional variables in explaining the variation in FDI between MENA countries. The effects of natural resource, the availability of better quality of infrastructure, openness to international trade and

lower level of macroeconomic instability all found to be significant and contribute positively to the increase in the inflow of FDI within the MENA region. The results also indicate that FDI between MENA countries is negatively associated with quality of institutions in the host country. This finding can be true in the context of MENA region as most of FDI inflows in the region occurs between countries with low quality of institutions. Investors in the MENA region seem to see no potential risk in investing in other country in the region because they work in similar business environment conditions at home country.

In order to assess for the hypothesis of whether the difference in the economic structure between MENA countries imply a difference in the level of FDI received by resource-rich and resource-poor countries, we estimate a dummy variable equal to one if a host country is resource-rich country or zero otherwise. A positive and significant coefficient on this variable implies that the MENA resource-rich countries receive more FDI compared to others, while a negative and significant coefficient implies the opposite. The results shows that the estimated coefficient on MENA resource-rich countries dummy is negative and statistically significant indicating that, if all the values of the explanatory variables are the same for both group of countries, MENA resource-rich countries would receive less FDI compared to resource-poor countries.

To answer the question of whether our explanatory variables affect MENA resource-rich and resource-poor differently, we estimate a separate regression for each group of countries. As can be seen from the regressions presented in columns 3 and 4, there are significant differences in the results estimated for the two groups of countries in term of the overall performance of the gravity model and also in term of the sign and significant of the estimated coefficients of the variables. First,

the overall performance of the gravity model as indicated by the R square is higher for resource poor-countries compared to resource-rich countries indicating that our variables explain high proportion in the variation of FDI to the MENA resource-poor countries. Second, the estimated coefficients on the variables of the gravity model show to have larger impacts on FDI flows to resource-poor countries compared to resource-rich country. Third, the effect of natural resource and institutions on FDI to resource-rich countries is the opposite of their effects on FDI to resource-poor countries. Accordingly, the effects of natural resource found to be negative and significant on FDI to resource-poor countries while its effect found to be positive and significant for resource-rich country. In contrast, the effect of institutions found to be positive on FDI to resource-poor countries while its effect found to be negative for resource-rich countries, but statistically insignificant for both groups of countries. Our results in this regard have an important implication about the adverse effect of resource curse on FDI between MENA countries. MENA resource-poor countries have been more successful in attracting FDI than resource-rich countries.

Table 5.4. Panel OLS fixed effects gravity model results 1998-2011

Variable	(1)	(2)	(3)	(4)
Constant	3.007 (1.30)	5.681** (2.56)	194.289** (2.57)	6.826** (2.18)
LN GDP*i*	0.027* (1.14)	0.027 (1.14)	0.080* (1.79)	0.000 (0.01)
LN GDP*j*	0.074*** (2.88)	0.040 (1.34)	-6.466** (-2.23)	-0.002 (-0.07)
LN WDIST*ij*	-0.776*** (-3.46)	-0.766*** (-3.44)	-2.506*** (5.28)	-0.933*** (-3.23)
CONTIG*ij*	1.994*** (4.65)	1.990*** (4.70)	4.372*** (5.49)	1.186** (2.35)
COMLANG20*ij*	0.810* (1.59)	0.803 (1.58)	1.304** (2.14)	-1.034 (-0.80)
BITS*ij*	0.907*** (3.05)	0.786*** (2.64)	1.388*** (2.70)	0.732** (2.01)
NATEXPj		0.013** (2.45)	-0.154** (-2.55)	0.018*** (3.13)
INFLACPI*j*		-0.137*** (-3.66)	-0.130 (-1.34)	-0.152*** (-3.58)
TRADE*j*		0.018*** (2.83)	-0.133*** (3.22)	0.019*** (2.72)
LN INTERNET*j*		0.818*** (4.70)	1.631*** (4.46)	0.677*** (3.40)
INSTIT*j*		-2.066*** (-3.27)	2.302 (1.34)	-1.571 (-1.85)
NATEXP DUMMY*j*		-3.49*** (-2.69)		
R-SQUARE	0.36	0.35	0.46	0.31
F-STATISTIC	56.43	49.90	45.84	23.95
RESET TEST *P*-VALUES	0.00	0.00	0.25	0.00
NUMBER OF OBSERVATIONS	3360	3360	1120	2240

Note: t-statistics in parentheses. *, **, * indicate significant at 1%, 5% and 10% respectively. Standard errors are robust to heteroskedasticity.**

Table 5.5. Panel Probit fixed effects gravity model results 1998-2011

Variable	(1)	(2)	(3)	(4)
Constant	-0.391 (-0.67)	0.567 (0.96)	54.395*** (2.78)	0.911 (1.09)
LN GDP*i*	0.002* (1.22)	0.002 (1.24)	0.006 (1.53)	0.000 (0.27)
LN GDP*j*	0.009*** (3.58)	0.006** (2.26)	-0.770*** (-2.60)	0.002 (1.22)
LN WDIST*ij*	-0.102*** (-5.87)	-0.102*** (-5.92)	-0.247*** (-5.67)	-0.096*** (-5.27)
CONTIG*ij*	0.124*** (3.76)	0.124*** (3.76)	0.386*** (6.04)	0.043 (1.40)
COMLANG20*ij*	0.071* (1.68)	0.071* (1.68)	0.120* (1.83)	-0.042 (-0.77)
BITS*ij*	0.062** (2.47)	0.053** (2.11)	0.140*** (2.59)	0.032 (1.17)
NATEXPj		0.001*** (3.00)	-0.013** (-2.30)	0.001*** (3.30)
INFLACPI*j*		-0.008*** (-3.01)	-0.014 (-1.49)	-0.005* (-1.94)
TRADE*j*		0.002*** (3.54)	-0.012*** (-2.80)	0.001*** (3.27)
LN INTERNET*j*		0.062*** (4.69)	0.132*** (3.39)	0.055*** (4.41)
INSTIT*j*		-0.138*** (-2.80)	0.272 (1.58)	-0.562 (-1.06)
NATEXP DUMMY*j*		-0.420*** (-4.42)		
R-SQUARE	0.32	0.33	0.38	0.32
F-STATISTIC	810.48	910.98	391.50	545.67
RESET TEST *P*-VALUES	0.11	0.27	0.17	0.26
NUMBER OF OBSERVATIONS	3360	3360	1120	2240

Note: t-statistics in parentheses *, **, * indicate significant at 1%, 5% and 10% respectively. Standard errors are robust to heteroskedasticity.**

5.6. Conclusion

This chapter investigates the determinants of bilateral FDI *between* MENA countries using a panel fixed effects gravity model during the period 1998-2011. The results from the basic gravity model indicate that FDI between MENA countries positively driven by the economic sizes of both home and host countries and negatively by the physical distance between them. The results also indicate that the roles played by common borders and bilateral investment treaties are particularly relevant and their effects shown to be highly significant, suggesting that bilateral FDI flows tend to be larger between neighbours, having already well-established investment treaties agreements. Our results from the augmented gravity model confirm the importance of economic and institutional factors in explaining the variation in FDI between MENA countries. The effects of better quality of infrastructure, openness to international trade, low level of macroeconomic instability all found to be important and contribute positively to the increase of FDI between MENA countries. The results also indicate that Intra-MENA FDI inflows and its determinants differ between resource-poor and resource-rich countries in the region. Accordingly, resource-poor countries have been more successful in attracting FDI compared to resource-rich countries. A dummy variable for resource-rich countries indicates the disadvantage of these countries in receiving FDI compared to resource-poor countries. The results also suggest that the effect of natural resource and institutions on FDI differ among MENA countries according to the difference in their economic structure. FDI to the resource-poor countries found to responds negatively to the availability of natural resource, and positively to the quality of institutions, opposite to the case of the resource-rich countries.

CHAPTER 6

Determinants of FDI to MENA and Developing Countries: A comparative Analysis

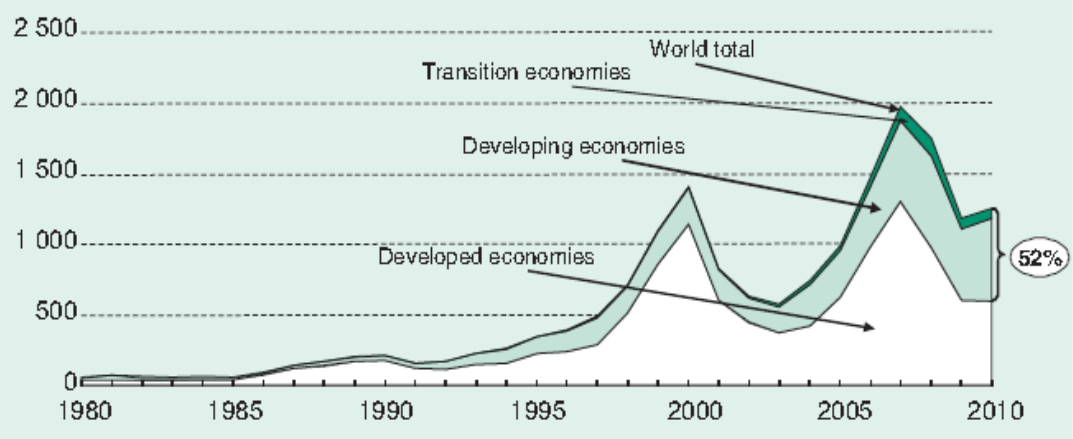
6.1. Introduction

This chapter investigates FDI determinants in MENA countries compared to FDI determinants in developing countries over the period 1996-2011. The results indicate that a MENA country receive on average 1.21 percent less FDI than a non-MENA country, and that the natural resources have a direct negative effect on FDI to MENA countries even after controlling for the necessary factors for both MENA and developing countries. The results also indicate that the marginal effects of return on investment, quality of infrastructure, macroeconomic instability and the interaction between natural resource and institutions on FDI is less for MENA countries compared to developing countries. Our result regarding the effect of the quality of institutions on FDI to MENA countries have an important implication for policy maker in the region. The suggestion following this finding is that an improvement in the quality of institutions will be beneficial to MENA countries in general, but more beneficial to the resource-rich countries.

6.2. World FDI Trend and Distribution

Global FDI flows have dramatically increased in the past three decades and reached an estimated 1,244 billion dollars in 2010. According to the World Investment Report (2011), for the first time since 1980, developing and transition economies together attracted more than half of the global FDI flows (see Figure 6.1). Also, as more international production moves to developing and transition economies, multinational companies are increasingly investing in those countries to maintain cost-effectiveness and to remain competitive in the global production network.

Figure 6.1. FDI inflows by group of economies, 1980-2010 (Billions of US$)



Source: World Investment Report (2011).

Table 6.1 shows that the share of developing countries in the world FDI inflows has rapidly increased from 38% to 45% over the period from 1996 to 2010. The countries that make up Asia are the largest FDI recipients among the developing countries. Asia's share in the world FDI inflows by the end of the year 2010 had reached 28%, followed by Latin America with 13%, MENA 5.5% and then Africa

3%. Although MENA countries' share in the world total FDI inflows was 1.5% in 1996 and it has increased ever since to reach 5.5% in 2010, its share at the global level remains relatively below the share level recorded in other developing countries in Asia and Latin America.

Table: 6.1. World total FDI inflows at current prices and in Billions of US$

Region	1996	As % of the world total FDI inflows	2010	As % of the world total FDI inflows
World	$391,439	100 %	$1,408,537	100 %
Developing countries	$149,536	38 %	$637,063	45 %
Developed countries	$236,032	60 %	$696,418	49 %
Countries of Africa	$6,298	1.6 %	$43,582	3 %
Countries of Latin America	$46,248	12%	$189,855	13 %
Countries of Asia	$96,873	25%	$400,687	28 %
Countries of MENA	$5,668	1.5 %	$76,751	5.5%

Source: UNCTAD Database.

These differences in the share of FDI flows between developing countries have raised the question of why some developing countries in Asia and Latin America are more successful in attracting FDI than other developing countries in Sub-Saharan Africa and the MENA region. In order to explain these differences in the flow of FDI to developing countries, some economists pointed to the role played out by the economic and institutional factors in these countries.

Asiedu (2002) uses a sample of 72 developing countries to examine whether factors that affect FDI in developing countries affect countries in Sub-Saharan Africa differently. The results indicate that a higher return on investment and a better quality of infrastructure have positive effects on FDI inflows to developing countries, but have no significant effects on the FDI inflows to Sub-Saharan Africa countries. Openness to trade promotes FDI to both Sub-Saharan Africa countries and developing countries; however, the marginal benefit from increasing openness is less for Sub-Saharan Africa countries.

Onyeiwu (2003) investigates the same question in the context of MENA countries using a panel of 51 developing countries, 10 of which are located in the MENA region. The study results show that some of the variables that affect FDI to developing countries are not important for FDI to MENA countries. These variables are the rate of return on investment, infrastructures, economic growth and inflation. The results also indicate that corruption and openness to trade are the most determinant factors that can explain the low level of FDI to the MENA region. Recently, Mohamed and Sidiropoulos (2010) also investigate the same question in their previous studies using a sample of 36 developing countries, in which 12 of these countries were in MENA region and another 24 were the major recipients of FDI in their respective regions in developing countries. The study concludes that FDI key determinants inflows in MENA countries are the size of the host economy, the government size, natural resources and the institutional variables. The study concludes that, countries that are receiving fewer foreign investments could make themselves more attractive to potential foreign investors.

In the literature on FDI determinants, it has been suggested that countries endowed with abundant natural resources (oil and gas in particular) are more likely to develop a weak quality of institutions. This is because the exploitation of fuels and minerals produces large economic rents. This provides incentives for unproductive rent-seeking behaviour involving corruption and, overall, weaker quality of institutions (see chapter one for broader discussion).

Kolstad and Wiig (2013) investigate the question of whether corruption deters or attracts FDI in the extractive industry using a sample of 81 developed and developing countries over the period from 1996 to 2009. The study results conclude that corruption within a country is associated with increased extractive industry

FDI, but at a diminishing rate as corruption increases. Asiedu (2013) empirically examined the interaction link between FDI, natural resources and institutions using panel data of 99 developing countries over the period from 1984 to 2011. The study concludes that natural resources have an adverse effect on FDI even after controlling the quality of institutions and other important determinants of FDI. The results also indicate that good quality institutions can mitigate the adverse effect of natural resources; however, these effects cannot be neutralised.

Our work differs from Onyeiwu (2003) and Mohamed and Sidiropoulos (2010) concern FDI determinants to MENA countries compared to developing countries in three respects. First, unlike Onyeiwu (2003) work, we include also MENA resource-rich countries in our sample and investigate in particular for the effect of natural resources on FDI. Second, we include the institutional element in our analysis using composite institutional index that reflect several characteristics of a country's overall quality of institutions, such as the voice and accountability, government effectiveness, regularity quality, rule of law and level of corruption. Third, we investigate the link between natural resource and institutions and their interaction effect on FDI to MENA countries compared to developing countries. Investigating the effect of the interaction between natural resource and institution on FDI to MENA countries in comparison to developing countries is particular important for policy makers in the MENA region considering the fact that most of MENA countries are resource-rich countries that have already weak quality of institutions and are in need for FDI.

6.3. Data and Variables

The data used in this study is a panel data cover the period 1996-2011. The sample of countries included in this analysis comprises 72 developing countries, of which 15 are located in the MENA region. The choice of countries and the time period of this analysis are determined by the availability of data on the variables of interest. All data used in this study were obtained from the World Bank Development Indicators database.[9] The sample of countries included in this study are **(1) MENA:** Algeria, Bahrain, Egypt, Iran, Kuwait, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, Turkey, United Arab Emirates and Yemen, **(2) Sub-Saharan Africa:** Benin, Botswana, Burkina Faso, Cameroon, Central African Republic, Comoros, Côte d'Ivoire, Ethiopia, Gabon, Ghana, Guinea, Guinea-Bissau, Kenya, Madagascar, Malawi, Mali, Namibia, Niger, Nigeria, Senegal, South Africa, Tanzania, Togo, Tonga, Uganda and Zimbabwe **(3) Latin America:** Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela **(4) South Asia:** Bangladesh, Cambodia, China, India, Indonesia, Maldives, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam.

As a starting point in the process of the variables selection, we check for the presence of outliers in the full sample regression. The presence of outliers can significantly change the magnitude and the signs of the estimated coefficients, which sometimes can lead to inappropriate inferences (Seung-Whan Choi 2009). A

[9] *Dataset last updated on 17 January 2014.*

plot of the residuals against the fitted values in our regression indicates that there are a few countries with some influential observation that lie far away from the main cluster of the data. These countries are Lebanon, Sudan, Mozambique, Singapore and Malaysia. The decision to exclude these countries form the full sample is essential because of their influential effects on the magnitude and the signs of the explanatory variables.

The definition of the dependent and independent variables, their resource and their expected signs are described in table 6.2.

Table 6.2. Definitions of the variables, sources and their expected signs

variable	Discerption	Data resource	Expected sign
FDI/GDP	The net of FDI as percentage of the host country's GDP	World Bank Development Indicators	Dependent Variable
ROI	The log of the inverse of the real GDP per capita PPP in current US$	World Bank Development Indicators	+
INFRA	A composed index of various infrastructure indicators, namely, Telephone lines (per 100people), Mobile cellular subscriptions (per 100 people), Internet users (per 100 people), Air transport, freight (million ton-km), Air transport, passengers carried, Roads, total network (km), Roads, and passengers carried (million passenger-km).	World Bank Development Indicators	+
TRADE	The sum of exports and imports of goods and services measured as a share of the host country' GDP.	World Bank Development Indicators	+
INSTIT	A composed index of the six world governance indicators, namely, voice and accountability, government effectiveness, regularity quality, rule of law and control of corruption (estimated values)	World Bank Governance Indicators	+
NATEXP	The sum of the share of fuel and minerals in the total host country' exports.	World Bank Governance Indicators	-
INFLACPI	Annual percentage change in the consumer price index.	World Bank Development Indicators	-
MENA	A dummy variable equal to one if a country is a MENA country or zero otherwise.	Constructed Manually	+

Table 6.3 presents the descriptive statistics of the variables used in this study. As can be seen for this table, openness to trade, availability of natural resources and the level of macroeconomic instability are the variables with the highest mean and standard deviation among all variables. Table (4) presents the pairwise correlations and the level of significance between the variables used in this study. As preliminary results, the correlation matrix gives an important indications about the relationship between the dependent and independent variables used in this study. Accordingly, our dependent variable FDI/GDP is positively correlated with the variables of infrastructure, openness to trade, institutions and negatively with the variables of return on investment, the availability of natural resources, the level of macroeconomic instability and the MENA region dummy.

Table 6.3. Data descriptive statistics

VARIABLES	Mean	Std.Dev.	Min	Max	Obs
FDIGDP	3.01	3.22	-8.59	33.57	1152
ROI	-7.40	1.37	-11.42	-4.70	1152
INFRA	-0.10	0.89	-0.82	8.36	1152
TRADE	73.76	36.85	14.93	562.06	1152
INSTIT	0.03	0.87	-1.87	2.59	1152
INFLACPI	33.42	769.24	-9.80	24411.03	1152
NATEXP	30.43	32.55	0	99.67	1152
MENA	0.16	0.37	0	1	1152

Table 6.4. Correlation Matrix

VARIABLES	FDIGDP	ROI	INFRA	TRADE	INSTIT	INFLACPI	NATEXP	MENA
FDIGDP	1							
ROI	-0.20*	1						
INFRA	0.15*	-0.58*	1					
TRADE	0.35*	-0.32*	0.13*	1				
INSTIT	0.30*	-0.61*	0.29*	0.27*	1			
INFLACPI	-0.02	0.03	-0.02	0.01	-0.08*	1		
NATEXP	-0.07*	-0.42*	0.10*	0.02	-0.06	-0.01	1	
MENA	-0.11*	-0.47*	0.16*	0.13*	0.09*	-0.02	0.66*	1

***Indicate significant at 5% level of confidence**

6.4. Model Specification

To empirically investigate the difference in FDI inflows and determinants between MENA and developing countries, we estimate a pooled OLS regression for the full sample of MENA and developing countries with countries and time fixed effects included in the model. The specification of the regression model used in this study can be outline as following:

$$FDI/GDP_{it} = \alpha_0 + \beta_1 ROI_{it} + \beta_2 INFRA_{it} + \beta_3 TRADE_{it} + \beta_4 INSTIT_{it} + \beta_5 NATEXP_{it} + \beta_6 INFLACPI_{it} + \beta_7 MENA_{it} + \theta_t + \gamma_t + \varepsilon_t$$

Where FDI/GDP_{it} is the net of FDI inflows as percentage of the host country' GDP.

ROI_{it} is the log of the inverse of the host country' real GDP per capita PPP.

$INFRA_{it}$ is a composed index of various infrastructure indicators.

$TRADE_{it}$ is the sum of exports and imports divided by the host country' GDP

$INSTIT_{it}$ is a composed index of the six world governance indicators

$NATEXP_{it}$ is the sum of the share of fuel and minerals in the total host country' exports

$INFLACPI_{it}$ is the annual percentage change in the consumer price index

$MENA_{it}$ is a dummy equal one if a country is a MENA country or zero otherwise.

θ_t present is a dummy for the country-specific effects

γ_t present is a dummy for the time-specific effects

ε_t present is the error term

6.5. Empirical Results

Table 6.5 reports the results obtained using a pooled OLS regression estimated for the full sample of MENA and developing countries over the period 1996-2011. Columns 1- 4 report the cross section regression results where the data averaged over the 16 years. Columns 5 and 6 report the panel data regression results over the same period. As start in our regressions, we consider only the significant variables for MENA and developing countries to see what factors can explain the variation in FDI as percentage of their GDPs.

The results reported in columns 1 indicate that 42% of the variation in FDI to MENA and developing countries can be explained by variables, namely, return on investment variable (ROI), the availability of infrastructure variable (INFRA), the openness to international trade variable (TRADE), the macroeconomic instability variable (INFLACPI) and the quality of institutions variables (INSTIT). The results indicate that FDI to MENA and developing countries increases with return on investment, infrastructure development, openness to trade, better quality of institutions, and lower level of macroeconomic instability. In column 2, we include the MENA dummy variable (MENA equal one if a country is a MENA country or zero otherwise) in our model to see whether MENA countries in average receive less FDI compared to other developing countries. The coefficient on the MENA dummy measures the difference in the FDI between MENA and developing countries, assuming that both groups of countries have the same levels of all the explanatory variables. The results reported in column 2 indicate that MENA dummy is negative and statistically significant at 5% level of confidence suggesting that, if all the values of the explanatory variables were the same for all developing countries, a MENA

country will receive about 1.21 percent less FDI than a non-MENA country. The inclusion of MENA dummy in the model also contributes to the overall significance of the model and increase the adjusted R square from 0.42 to 0.45 percent. This suggests that MENA countries as a group of countries have an important regional effect on the overall flow of FDI to developing countries. Next, we test for the robustness of the model and include the natural resource variable (NATEXP) in the model.

The inclusion of the natural resource variable in our model is particular important as one of the aims of this study is to investigate its effects on the ability of MENA countries to attract FDI. Columns 3 report the results of the regression after the inclusion of the natural resource variable. The results indicate that the effect of the natural resource variable are significant and also increase the overall significant of the model (as indicated by adjusted R square value) notably from 0.45 to 0.51 percent. Furthermore, the inclusion of natural resource variable has important inference as it increases the negative significant impact of MENA dummy on the FDI from 1.21 to 2.15 percent. This suggests that adding the natural resource variable to the model worsen the chance of a MENA country in receiving more FDI compared to a non-MENA country. Using the regression reported in column 3 as baseline model, we test whether the impact of the explanatory variables is the same for MENA and non-MENA countries.

In order to test for this hypothesis, we interacting each of the explanatory variables with the MENA dummy. The results reported in column 4 are the regression results with interactive terms of MENA dummy included in the model. There are three important findings can be observed from this regression results, first, the coefficients of the interactive terms between MENA dummy with the variables of return on

investment (MENA x ROI), availability of infrastructure (MENA x INFRA), availability of natural resource (MENA x NATEXP), macroeconomic instability (MENA x INFLACPI) and natural resource and institution (MENA x NATEXP x INSTIT) variables are all found to be negatively associated with FDI. This suggests that marginal impacts of these variables on FDI are less for MENA countries compared to non-MENA countries in our sample. Second, the coefficient of the interactive term of MENA dummy with availability of natural resource (MENA x NATEXP) and natural resource with institutions (MENA x NATEXP x INSTIT) are the only coefficients stand out to be statistically significant. Third, the coefficients of the interactive term of MENA dummy with openness to trade variable (MENA x TRADE) and MENA dummy with institutions variable (MENA x INSTIT) are the only coefficients that are positively associated with FDI.

Table 6.6 reports the estimated partial coefficients and their level of significance for both MENA and non-MENA countries. Accordingly, all the partial coefficients of the explanatory variables estimated for MENA dummy have significant impacts on FDI except for the interactive term between natural resource and institutions variables (NATEXP x INSTIT). The significance of the partial coefficients estimated for MENA dummy interactions with the variables of return on investment, availability of infrastructure, openness to trade, quality of institutions, availability of natural resources and macroeconomic instability based on the fact (F-test) that I can reject the hypothesis that the sum of the coefficients for each of these variables estimated for MENA dummy and non-MENA countries are equal to zero. Likewise, the insignificance of estimated partial coefficient of the interactive term between natural resource and institutions (NATEXP x INSTIT)based on the fact that I cannot

reject the hypothesis that the sum of the coefficients estimated for MENA country and non-MENA countries is equal to zero .

To check for the robustness of the results produced with the averaged data, we repeat the regression reported in columns 4 using a panel OLS regression model. The estimation of the panel OLS regression model allow for taking account of the time and countries specific effects and therefore, it expected to produce robust results. Column 5 reports the results from the panel OLS regression without time and country specific effects, while column 6 reports the results when the time and countries specific effect are included in the model. The results produced by the pooled OLS regression (common intercept and slope for all countries) when we used panel data are similar to the results produced when we used averaged data. However, these results changed when we control for the country and the time effects (different slop and intercept for each country). The effect of return on investment variable on FDI becomes positive and statistically significant for developing countries but not for MENA countries. Also, the effect of openness to trade on FDI becomes positive and statistically significant for MENA countries but not for developing countries. In regard to the effect of natural resource and institutions on FDI, the results from the fixed effects model show that the effect of natural resource on FDI is negative for both MENA and developing countries but statistically significant only for developing countries. However, the interaction between natural resource and institutions found to be positive but statistically insignificant for developing countries while its effect found to be negative and statistically significant for MENA countries. This finding gives a clear indication those MENA countries different than other developing countries in term of the interactive effect of natural resource and institutions on FDI.

Table 6.5. Pooled OLS results for MENA and developing countries 1996-2011

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Constant	4.651***	2.882*	4.913***	4.933**	2.393***	10.980***
	(3.35)	(1.78)	(3.09)	(2.68)	(2.93)	(2.82)
ROI	0.551***	0.283	0.657***	0.684***	0.173	1.260**
	(3.02)	(1.31)	(3.07)	(2.83)	(1.39)	(2.21)
INFRA	0.604**	0.553**	0.740***	0.827***	0.345***	-1.126
	(2.65)	(2.52)	(3.16)	(3.34)	(3.47)	(-0.82)
TRADE	0.032***	0.032***	0.034***	0.035***	0.023***	-0.002
	(5.80)	(6.07)	(6.68)	(7.04)	(3.13)	(-0.52)
INFLACPI	-0.000**	-0.000***	-0.000***	-0.000**	-0.000	-0.000*
	(-2.27)	(-2.73)	(-2.70)	(-2.23)	(-0.75)	(-1.89)
INSTIT	0.880***	0.668**	1.025***	0.910**	0.779***	1.412**
	(3.22)	(2.29)	(4.00)	(2.47)	(3.72)	(2.45)
MENA		-1.211**	-2.158***	-4.586	-10.718*	-19.809*
		(-2.08)	(-2.80)	(-0.32)	(-1.79)	(-1.73)
NATEXP			0.023***	0.029***	0.011*	-0.036**
			(3.01)	(3.43)	(1.74)	(-2.54)
NATEXP*INSTIT				0.007	0.011*	0.010
				(1.10)	(1.90)	(0.61)
MENA*ROI				-1.300	-1.382*	-0.237
				(-0.73)	(-1.78)	(-0.21)
MENA*INFRA				-2.305	-0.495	-0.972
				(-1.17)	(-0.42)	(-0.80)
MENA*MTRADE				0.013	0.072	0.241**
				(0.43)	(1.29)	(2.50)
MENA*INFLACPI				-0.152	0.048	-0.068
				(-0.51)	(0.98)	(-0.84)
MENA*INSTIT				6.315	0.917	2.519
				(1.38)	(0.23)	(0.74)
MENA*NATEXP				-0.113**	-0.103**	-0.025
				(-2.28)	(-2.02)	(-0.50)
MENA*NATEXP*INSTIT				-0.093*	-0.057**	-0.089*
				(-1.96)	(-2.02)	(-1.83)
ADJUSTED R-SQUARE	0.42	0.45	0.51	0.52	0.34	0.50
NORMALITY TEST P-VALUE	0.25	0.10	0.64	0.90	0.00	0.00
HETEROSKEDASTICITY TEST P-VALUE	0.19	0.20	0.22	0.31	0.00	0.00
F-STATISTIC	18.66	17.83	19.63	17.60	24.89	22.79
COUNTRY DUMMY	NO	NO	NO	NO	NO	YES
YEAR DUMMY	NO	NO	NO	NO	NO	YES
NUMBER OF OBSERVATIONS	72	72	72	72	1152	1152

Note: *,,*** indicate significant at 1%,5% and 10% respectively. T-statistics is reported in parentheses. Shapiro–Wilk normality test used to detect for the normality of the residuals. Breusch-Pagan / Cook-Weisberg test used to detect for heteroskedasticity.**

Table 6.6. Partial effect of the explanatory variables

Variable	MENA COUNTRIES	NON-MENA COUNTRIES
ROI	-0.615**	0.684***
INFRA	-1.478***	0.827***
TRADE	0.049***	0.035***
INFLACPI	-0.152*	-0.000**
INSTIT	7.225**	0.910**
NATEXP	-0.084***	0.029***
NATEXP*INSTIT	-0.086	0.007

*****, **, * indicate significant at 1%, 5% and 10% respectively.**

6.6. Conclusion

This study has empirically investigated the determinants of FDI to MENA countries compared to developing countries over the period 1996-2011. The aim of this study was to answer three important questions about FD flows to MENA and developing countries: (1) Do MENA countries receive less FDI than other developing countries? (2) Do FDI determinants to developing countries affect FDI to MENA countries differently? (3) What are the effect of interaction between natural resource and institutions on FDI to MENA and developing countries? In order to address the first question, we estimate pooled OLS regression that includes both MENA and non-MENA countries and assess for the impact of MENA countries using dummy variable. The results indicate that if all the values of the explanatory variables were the same for all developing countries, a MENA country receive 1.21 percent less FDI than a non-MENA country. The results also indicate that a MENA country receives even less FDI when the natural resource variable added to the model. This finding suggests that the availability of natural resource in MENA region has worsened its

chance to receive more FDI as much as developing countries. In order to address the second question about the differences in FDI determinants between MENA and developing countries, we follow Asiedu (2002) steps and interact each of the explanatory variables with the MENA dummy. The results indicate that except for trade and institutions, all the interactive terms of the MENA dummy with the explanatory variables are negatively associated with FDI. This indicates clearly that MENA countries on average have less advantage in attracting more FDI in comparison to developing countries. Accordingly, higher return on investment, availability of natural resource, better quality of infrastructure and institutions promotes FDI only to developing countries but not for MENA countries. In order to answer the third question, we interact natural resource variable and institutions with MENA dummy and check for their effect on FDI. Our results in this regard suggest the interaction between natural resource and institutions have a negative significant impact on FDI. This finding is different for developing countries in our sample in which the interaction of natural resource and institutions found to be positive.

This study has important policy implications for policy makers in MENA region about how natural resource abundant countries in the region can avoid the natural resource curse. Our results suggest that an improvement in the quality of institutions is beneficial for MENA countries and can results to great extend in higher inflows of FDI to the region. This recommendation is in particular relevant for MENA resource-rich countries that have already weak quality of institutions and are in need for FDI.

CHAPTER 7

FDI and Performance of Firms in MENA Region

7.1. Introduction

In recent years, many developing countries sought to attract FDI as a strategy for promoting local industries and increasing the productivity and competitiveness of domestic firms. The presence of FDI in the host country can transfer many advantages (e.g. technology, managerial and labour skills and financial capital) and it has also direct and indirect effects on the welfare and development of the host country (see chapter one for more discussion about the benefits and costs of FDI). The superiority of foreign firms in their performance compared to the performance of domestic firms is more evident in the literature of firm-level FDI, and its roots can be traced back to the so-called “industrial organization theory”. Accordingly, foreign firms are able to compete with domestic firms in their local market because foreign firms possess specific advantages such as technological know-how, financial capital as well as marketing and managing skills.

In the literature on FDI, there are a large number of firm-level FDI studies that have investigated the importance of FDI to the development and growth of the host country. However, empirical evidence about their effects on the performance of domestic firms is mixed. Caves (1974) argues that the entrance of foreign firms into the local market is likely to affect the structure of the market in the host country and contribute positively to the productivity and competitiveness of the domestic firms. This is mainly because the foreign firms bring with it many advantages, including a higher level of technical efficiency (crowding-in effect). Aitken and Harrison (1999) found that the increases in foreign equity participation is positively correlated with the productivity of small firms only, suggesting that small firms benefit from the productive advantages of foreign owners. However, an increase in foreign ownership negatively affects the productivity of wholly domestically owned firms in the same industry (crowding-out effect). The authors explained the difference of his results on other studies by the tendency of multinationals MNEs to locate in more productive sectors and to invest in more productive firms (I refer to chapter 3 for broader discussion).

In the literature, there is a wide range of studies that have empirically investigated the link between firm-level FDI and the performance of firms in many developed and developing countries. However, our review of the literature shows that there is a scarcity in empirical studies that have examined this relationship in the context of MENA region. Most of the previous studies that have used firm-level FDI on MENA region are country survey case studies that have looked similarly to the performance of firms in particular industry at particular year. The scarcity in empirical analysis studies on MENA countries at the microeconomic level is mainly attributed to the lack in the firm-level data available on these countries. In

recent years, more firm-level survey data have become available and, as consequence, researchers are more encouraged to make systematic use of different data sources. Atiyas (2011) summarises studies that use firm-level data in MENA countries to analyse productivity of firms and its relationship to market structure. He pointed out that there are an increasing number of studies that used firm-level data to assess the impacts of market structure and the business environment on firm performance (see Dethier et al. (2010) for a detailed survey). However, studies that have investigated these impacts in the context of MENA countries have not been carried out, (Atiyas 2011, p. 178).

Using a unique firm-level data provided by the World Bank Enterprise Survey, the aim of this research is to investigate the effects of FDI and business environment conditions on the performance of firms in three selected MENA countries, namely Egypt, Morocco and Turkey, and two industries, textiles and garments. More specifically, the aim of these analyses is to answer the following questions: (1) What are the effect of FDI on performance of domestic firms? (2) Do foreign owned firms perform better than domestic owned firms? (3)Are there any differences in the performance of firms across countries and industries? (4) What are the effects of business environment constraints on the performance of firms?

In order to answer the above questions, we use a comparable a panel firm-level data provided by the World Bank. Our work contributes to the existing literature by providing new evidence on the performance of firms in three MENA representative countries namely, Egypt, Morocco and Turkey in the industry of textiles and garment.

7.2. Importance of Textiles and Garments in MENA

Textiles and garments industry has been long tradition in MENA region and considered to be a major contributor to the income and employments of the resource-poor countries in the region. The contribution of textiles and garments production to GDP differs among MENA countries (see table 7.1), and it is up to 3% in Egypt, 9.4% in Jordan, 5.1% in Morocco and 5.6% in Tunisia,(World Bank 2006a). In Syria, the textile and garment sector represent about 24% of non-oil industrial production and 45% of non-oil exports in 2004. The number of textile and garment companies in 2004 accounted for more than 20% of Syrian industrial firms, (UNIDO 2009). Turkey is one of the world top textiles and garments producers (represent 3.7% of the world market share) and it is ranked among the most competitive countries such as China, India and South Korea (WTO 2010). In term of the employment, textiles and garments sector absorbs a large share of low-skilled industrial labor and affects, directly and indirectly, the incomes of millions of people in the MENA region. In Egypt, the sector represents nearly 30% of the industrial labor force. In Turkey the sector provides approximately 2 million jobs for workers. In Morocco and Tunisia, more than 200,000 workers depend on textiles and garments for their income and living, while in Jordan, the industry provides about 30,000 jobs in the country.

The end of the Multi-fibre Arrangement on January 1, 2005, has significant deterring impacts on textiles and garments productions in MENA region. Most of MENA countries (except for Turkey) were not able to compete with the lower cost of other developing countries in Asia and Latin America and have lost their share in the world market. The effects were severing especially in Egypt as domestic firms'

sales have dropped significantly (50% decline between the years 2000 and 2004) reflecting the fact that foreign competitors are driving Egyptian textiles and garments firms out of the domestic market, (El-Haddad 2012).

Table 7.1. Contribution of textiles and garments in MENA economies (2005)

Country	Contribution to overall GDP (%)	Contribution to industrial value added (%)	Share of T&G in employment (%)
Egypt	3	30	30
Jordan	9.4	20	20
Morocco	5.1	17	45
Tunisia	5.6	42	44*

Source: Adapted from the World Bank MENA report No. 35376. * Lahcen Achy(2011)

7.3. Data and Variables

In this study, we use a new available firm-level data provided by the World Bank Enterprise Survey to investigate the effects of FDI and business environment constraints on the performance of firms in three MENA representative countries, Egypt, Morocco and Turkey in the industries of textiles and garments. The total number of firms used in this study is 1557 textiles and garments firms surveyed over the period 2004-2008. Unfortunately, firm-level data on other important textiles and garments producer countries like Tunisia, Syria and Jordan are not available. Also, due to a lot of missing observations on some of the variables needed in our estimation, the total available number of firms is lower than the actual number in all the three countries. Table 7.2 present the description of the variables used in this study and their expected signs.

Table 7.2. Description of the variables and their expected signs

Variable	Discerption of the variables	Expected Signs
LN SPW	The log of total sales of firm in US$ divided by the number of workers.	Dependent .V
LN CAPPW	The log of total assets of firm in US$ divided by the number of workers.	+
FOREIGN	The percentage of firms owned by foreign	+
DOMESTIC	The percentage of firms owned by domestic	-
EDUCATION	Inadequately educated workforce obstacle indicator encoded as 0: No obstacle; 1: Minor obstacle; 2: Moderate obstacle ;3: Major obstacle; 4: very severe obstacle	–
FINANCE	Access to finance obstacle indicator encoded as 0: No obstacle; 1: Minor obstacle; 2: Moderate obstacle ;3: Major obstacle; 4: very severe obstacle	_
CORRUPTION	Corruption obstacle indicator encoded as 0: No obstacle; 1: Minor obstacle; 2: Moderate obstacle ;3: Major obstacle; 4: very severe obstacle	_
COMPETITORS	A dummy variable equal to one if a firm have more than 3 competitors or zero otherwise	–
ELECTRICITY	The average number of power outages per month	_
REGULATIONS	Factor analysis score on five government regulation obstacles, namely, labour regulations, customs and trade regulations, business licensing and operating permits, tax rates and tax administration obstacles.	–
SMALL	A dummy variable equal to one if the number of the workers in a firm is less than 20 or zero otherwise.	+
MEDIUM	A dummy variable equal to one if the number of the workers in a firm is more than 20 and less than 100 or zero otherwise.	+
LARGE	A dummy variable equal to one if the number of the workers in a firm is more than 100 or zero otherwise.	+

Source: World Bank Enterprise Surveys

Table 7.3 present the data deceptive statistics of the variables for the full sample of firms in the three MENA countries. As can be seen from the table, the electricity outages indicator and the percentage of the foreign ownership are the variables with the highest mean and standard deviation among the variables. The average value for the electricity outages variable is 9.28 percent and its stander deviation is 35.34 percent. Also, the average value for the percentage of foreign ownership is 6.93 percent and its stander deviation is 23.96 percent.

Table 7.3. Data descriptive statistics

VARIBLES	Mean	Std. Dev.	Min	Max	Obs
LN SPW	9.07	1.56	-5.74	20.34	1557
LN CAPPW	8.17	1.76	-0.23	17.75	1557
FOREIGN	6.93	23.96	0	100	1557
DOMESTIC	1.40	11.60	0	100	1557
EDUCATION	1.81	1.53	0	4	1557
FINANCE	0.71	1.31	0	4	1557
CORRUPTION	1.73	1.61	0	4	1557
COMPETITORS	0.18	0.39	0	1	1557
ELECTRICITY	9.28	35.34	0	777	1557
REGULATIONS	0.06	0.91	-1.62	2.78	1557
SMALL	0.26	0.44	0	1	1557
MEDIUM	0.36	0.48	0	1	1557
LARGE	0.38	0.49	0	1	1557

Table 7.4 present the correlations and level of significance between the variables used in this study. The table show that our dependent variable (sales per workers) positively correlated with the variables of capital intensity, foreign ownership, and large size firm dummy and negatively to the variables of domestic ownership, education of labor obstacle, finance obstacle, corruption obstacle, the number of competitors, electricity outages, government regulations, small size firm dummy and medium size firm dummy.

Table 7.4. Correlation Matrix

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	1												
(2)	0.44*	1											
(3)	0.04	-0.03	1										
(4)	-0.10*	-0.08*	-0.03	1									
(5)	-0.09*	-0.03	-0.01	-0.02	1								
(6)	-0.02	0.01	-0.03	0.06*	0.10*	1							
(7)	-0.08*	0.05*	-0.10*	-0.04	0.19*	0.15*	1						
(8)	0.21*	0.14*	-0.10*	-0.01	0.02	0.06*	0.10*	1					
(9)	-0.09*	0.02	-0.06*	-0.03	0.09*	0.02	0.07*	0.03	1				
(10)	-0.05*	-0.06*	-0.01	-0.09*	0.30*	0.13*	0.27*	-0.02	0.03	1			
(11)	-0.15*	-0.03	-0.12*	-0.08*	-0.04	-0.02	0.04	-0.05*	0.09*	-0.04	1		
(12)	0.10*	0.07*	-0.04	-0.09*	-0.05*	-0.01	-0.03	-0.01	-0.02	0.05*	-0.45*	1	
(13)	0.03	-0.05	0.15*	0.16*	0.08*	0.04	-0.01	0.05*	-0.06*	-0.01	-0.47*	-0.58*	1

Note: * Indicate significant at 5% level of confidence. (1) LN SPW (2) LNCAPPW (3) FOREIGN (4) DOMESTIC (5) EDUCATION (6) FINANCE (7) CORRUPTION (8) COMPETITORS (9) ELECTRICITY (10) REGULATIONS (11) SMALL (12) MEDIUM (13) LARGE.

7.4. World Bank Enterprise Survey

The World Bank Enterprise Survey database considered as an important and rich source of firm-level data for researchers; it has a wider scope of topics and information about various issues related to the productivity of firms overall the world. The data cover more than 130,000 firms across more than 120 countries. One of the many advantages of using this survey is that the questions are identical through firms across all countries. The standard enterprise survey questionnaire includes questions about firm characteristics, gender participation, access to finance, annual sales, costs of inputs/labour, workforce composition, bribery, licensing, infrastructure, trade, crime, competition, capacity utilisation, land and permits, taxation, informality, business-government relations, innovation and technology, and performance measures. Over 90% of the questions objectively ascertain characteristics of a country's business environment. The remaining questions assess the survey respondents' opinions on the obstacles (0: No obstacle; 1: Minor obstacle; 2: Moderate obstacle, 3: Major obstacle; 4: very severe obstacle) to firm growth and performance. The mode of data collection is face-to-face interviews.

7.5. Specification of the Model

In order to investigate empirically the impacts of the FDI and the business environment constraints on performance of firms in the three selected MENA countries, we use a panel OLS regression model. The specification of the panel OLS regression used in this study outlined as follows:

$$LN\ SPW_{it} = \beta_0 + \beta_1 LN\ CAPPW_{it} + \beta_2 FOREIGN_{it} + \beta_3 DOMESTIC_{it} + \beta_4 EDUCATION_{it} + \beta_5 FINANCE_{it} + \beta_6 CORRRUPTION_{it} + \beta_7 COMPETITORS_{it} + \beta_8 ELECTRICITY_{it} + \beta_9 REGULATION_{it} + \beta_{10} SMALL_{it} + \beta_{11} MEDIUM_{it} + \beta_{12} LARGE_{it} + \epsilon_t$$

Where:

$LN\ SPW_{it}$ is the log of total sales in US$ divided by the number of workers.

$LN\ CAPPW_{it}$ is the log of total assets in US$ divided by the number of workers.

$FOREIGN_{it}$ is the percentage of firms owned by foreign.

$DOMESTIC_{it}$ is the percentage of firms owned by domestic.

$EDUCATION_{it}$ is the labour education obstacle.

$FINANCE_{it}$ is the access to finance obstacle.

$CORRUPTION_{it}$ is the corruption obstacle.

$COMPETITORS_{it}$ is a dummy variable for the number of competitors.

$ELECTRICITY_{it}$ is the electricity outages obstacle.

$REGULATIONS_{it}$ is the factor analysis of the government regulations obstacle.

$SMALL_{it}$ is a dummy variable for small firms (20 workers or less).

$MEDIUM_{it}$ is a dummy variable for small firms (more than 20 and less than 100).

$LARGE_{it}$ is a dummy variable for large firms (100 workers or more).

ϵ_t is the error term.

7.6. Empirical Results

Table 7.5 presents the panel OLS regression results for textiles and garments firms in the three selected MENA countries Egypt, Morocco and Turkey over the period 2004-2008. The use of panel data in qualitative studies has an important advantage that we are able to track the performance of same firm over time and control for the firm-level effects such as change in the ownership and quality of firms (see Aitken and Harrison 1999). As start in our empirical analysis, we estimate a pooled OLS regression for the full sample of firms in the three MENA countries (baseline specification) to see what factors can explain the performance of firms in the three selected countries. Column 1 present the regression results of the baseline specification. Accordingly, the estimated coefficient on the ratio of foreign ownership found to be positive and statistically significant indicates that the increase in the foreign ownership indeed increase the productivity per work of domestic firms. In contact, the estimated coefficient on the ratio of domestic ownership found to be negative and statistically significant indicating that the increase in the domestic ownership worsens the productivity per worker of firms. Our result in this regard is in line with the previous studies that confirmed the superiority of foreign firms in their performance over the domestic firms in the local market.

The results also indicate that the performance of firms hindered by the constraints of business environment in the three MENA selected countries. The estimated coefficients on education of labor, access to finance, corruption and electricity outages obstacles were all found to be negatively associated with the performance

of firms in these countries. The estimated coefficients on the firm size dummies indicate that medium size firms tend to be in general more productive than small size firms. The estimated coefficient on the competition found to be positive and statistically significant. This may come across as an unexpected result. As suggested in the literature of market structure and performance of firms, the increase in the number of competitors in an industry is likely to increase the competition level and, as a result, it is expected to have an adverse negative effect on the performance of firms. However, in the context of MENA countries where there are many state owned firms that have been recently privatised, the change in the control over firms form domestic to foreign is expected to added to the overall productivity of the firms. Ben Naceur etal. (2007) assesses the performance of newly privatised firms in Egypt, Morocco, Tunisia and turkey and found that that these firms experience significant increase in profitability and operating efficiency.

To test for the hypothesis of whether the performance of firms differs across the two industries, we estimate a dummy for industry (textiles dummy equal one if a firm is operating in textiles industry or zero otherwise). The coefficient on the industry dummy measures the difference in the performance of firms between the three selected MENA countries, assuming that these countries have the same levels of all the variables. The results reported in column 2 indicate that the coefficient on textiles dummy is positive and statistically significant. This suggests that, if all the values of the variables were the same for the three countries, textiles firms are more productive per worker than garments firms in the three MENA countries. After, we test for the hypothesis of whether the performance of firms differs across countries in each industry. In order to this, we estimate separate regressions by industry and test for the performance of firms by country using dummies. The results reported in

columns 3, 4 and 5 are the regression results estimated for textiles firms only, while the regression result reported in columns 6, 7 and 8 are the regression results estimated for garments firms only.

The results produced for textiles and garments firms indicate that there are significant differences in the performance of firms in the three MENA countries across the two industries. The coefficient on Egypt dummy found to be negative and statistically significant whiles the coefficients on Morocco and Turkey' dummies found to be positive and statistically significant in both industries. This suggests that textiles and garments firms in Egypt preform efficiently less compared to the performance of textiles and garments firms in Morocco and Turkey. Furthermore, the results indicate that the magnitudes of these effects differ between countries and industries. For instance, the magnitude of the coefficient estimated for textiles firms in Turkey shows to have higher impact compared to the coefficient estimated for textiles firms in Morocco. This suggests that textiles firms in Turkey preform efficiently higher than textiles firms in Morocco. In contrast, the magnitude of the coefficient estimated for garments firms in Morocco shows to have higher impact compared to the impact of the coefficient estimated for garments firms in Turkey. This also suggests that garments firms in Morocco preform efficiently higher than garments firms in Turkey.

The results also show that our variables affect the performance of firms differently across countries and industries. The results suggest that there are heterogeneity in the performance of firms in turkey and performance of firms in Egypt and Morocco. This difference in the behaviour of firms is notable especially when we estimate separate regression for each industry and control for the effects of each country using a country dummy. For instance, in column 5, the introduction of

Turkey dummy to the regression indicate that the presence of foreign ownership is highly important for the performance of textiles firms in Egypt and Morocco but not for textiles firms in Turkey. Also, in column 8, the introduction of Turkey dummy to the regression indicate that access to finance is severe obstacle for the performance of garments firms in Egypt and Morocco but not for garments firms in Turkey. Likewise, in columns 5 and 8 the effect of corruption shows to be highly significant for the performance of firms in Egypt and Morocco but not for the performance of firms in Turkey. Another important observation also is the effect of competition on the performance of textiles firms in Egypt and Morocco which appear to be negative but statistically insignificant after the inclusion of Turkey dummy to the regression reported in column 5.

Table 7.5. Panel OLS regression results for Egypt, Morocco and Turkey 2004-2008

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CONSTANT	6.220***	6.163***	6.492***	5.552***	6.965***	7.298***	5.387***	6.308***
	(29.97)	(28.92)	(24.89)	(17.12)	(23.61)	(25.49)	(16.84)	(19.49)
LN CAPINTNT	0.374***	0.371***	0.367***	0.386***	0.253***	0.313***	0.381***	0.361***
	(15.63)	(15.61)	(12.19)	(11.25)	(7.23)	(10.64)	(11.38)	(10.75)
FOREIGN	0.003***	0.003***	0.001	0.000	0.002**	0.002*	0.004**	0.008***
	(3.74)	(3.73)	(1.20)	(0.23)	(2.55)	(1.86)	(2.32)	(3.97)
DOMESTIC	-0.008***	-0.009***	-0.003	-0.007**	-0.007***	-0.006*	-0.006	-0.006
	(-3.01)	(-3.05)	(-1.20)	(-2.32)	(0.008)	(-1.66)	(-1.28)	(-0.78)
EDUCATION	-0.062***	-0.060***	0.003	-0.019	-0.043**	0.039	-0.008	-0.055**
	(-2.71)	(-2.63)	(0.13)	(-0.68)	(-1.63)	(1.24)	(-0.23)	(-1.53)
FINANCE	-0.037	-0.03	-0.095	-0.071	-0.026	-0.017	-0.033	-0.115***
	(-1.34)	(-1.33)	(-1.82)	(-1.89)	(-0.81)	(-0.45)	(-0.76)	(-2.85)
CORRUPTION	-0.095***	-0.093***	0.008	-0.048*	-0.078***	0.045	0.048	-0.105***
	(-4.27)	(-4.21)	(0.31)	(-1.72)	(-2.93)	(1.56)	(1.39)	(-3.17)
COMPETITORS	0.550***	0.553***	0.331***	0.568***	-0.137	0.522***	0.992***	0.280
	(5.08)	(5.10)	(2.85)	(4.29)	(-1.06)	(3.41)	(5.16)	(1.57)
ELECTRICITY	-0.002**	-0.002***	0.000	-0.001	-0.001	-0.001	-0.004**	-0.006***
	(-2.60)	(-2.63)	(0.09)	(-1.52)	(-1.20)	(-0.84)	(-2.19)	(-3.10)
REGULATIONS	0.047	0.047	-0.038	-0.010	0.108**	-0.084	-0.103*	0.073
	(1.24)	(1.23)	(-0.84)	(-0.21)	(2.36)	(-1.56)	(-1.75)	(1.19)
SMALL SIZE	-0.301***	-0.280***	-0.074*	-0.074*	-0.041*	-3.317**	-0.388***	-0.451***
	(-3.33)	(-3.01)	(-1.62)	(-1.60)	(-1.35)	(-2.43)	(-2.64)	(-3.21)
MEDIUM SIZE	0.071	0.086	0.023	0.177	0.147	1.114	0.093	0.031
	(0.89)	(1.05)	(0.19)	(1.38)	(1.19)	(0.93)	(0.67)	(0.23)
TEXTILES DUMMY		0.087**						
		(1.23)						
EGYPT DUMMY			-1.142***			-1.733***		
			(-12.08)			(-15.28)		
MOROCCO DUMMY				0.605***			1.255***	
				(4.81)			(10.21)	
TURKEY DUMMY					1.804***			1.645***
					(13.15)			(7.59)
ADJ R-SQUARE	0.35	0.35	0.40	0.32	0.39	0.55	0.43	0.42
NORMALITY TEST P-VALUE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HETEROSKEDASTICITY TEST P-VALUE	0.00	0.00	0.00	0.00	0.67	0.48	0.84	0.42
F-STATISTIC	47.04	43.35	37.27	22.17	67.78	75.16	53.96	39.89
VIF MEAN VALUE	1.13	1.13	1.28	1.34	1.28	1.25	1.26	1.23
NUMBER OFF OBSERVATIONS	1557	1557	997	997	997	560	560	560

Note: *,,*** indicate significant at 1%,5% and 10% respectively. T-statistics reported in parentheses. Shapiro–Wilk normality test used to detect for the normality of the residuals. Breusch-Pagan / Cook-Weisberg test used to detect for heteroskedasticity. Variance inflation factor (VIF) indicator used to detect for multicollinearity.**

7.7. Conclusion

This chapter investigates empirically the effects of FDI and business environment constraints on the performance of firms in three MENA countries, Egypt, Morocco and Turkey over the period 2004-2008. The results from the pooled OLS regression estimated across countries and industries indicate that foreign ownership tends to increase the productivity per worker of firms while the case is the opposite for domestic firms. The results also show that performance of firms is hindered by the constraints of business environments in the three MENA countries. The effect of education of labor, access to finance, corruption and electricity outages obstacles were all found to be negatively associated with the growth and performance of firms. The results also show that there are significant differences in the performance of firms across countries and industries. A dummy variable encoded for industry indicates that textiles firms generally perform better than garments firms in the three MENA countries. Our comparison about the performance of firms in the three countries indicates that textiles and garments firms perform the best in Turkey and Morocco and the worst in Egypt. A dummy variable encoded for country indicated that firms in Egypt have less advantage in their productivity per worker than firms in Turkey and Morocco. The effects of foreign ownership, corruption, labour education, access to finance found to be more important for the performance of firms in Egypt and Morocco than the performance of firms in Turkey. The implication for policy makers in Egypt and Morocco following these results is that an increase in the foreign participation in firm and the improvement in the overall business environment condition of firms in Egypt and Morocco can result in optimal level and productivity of firms equal to that in Turkey.

Chapter 8

Conclusion

8.1. Summary of the Empirical Findings

This chapter outlines the main findings and contributions of this thesis and offers some policy implications and suggestions for further researches. The empirical work of this thesis consists of three main chapters. In chapter five, we investigate the determinants of FDI within the MENA region using a gravity model. FDI between MENA countries represents a high share of the total FDI to the region (a third of the total FDI to the MENA region is intraregional) and, therefore, one of the aims of this thesis was to examine the economic and institutional determinant factors of these flows. The empirical analysis of this research was conducted using a gravity model, with time and country fixed effects included in the model. The use of the gravity model for this study in particular was to access the importance of geographical and culture effects on the flow of FDI within the region. The specification of the gravity model was estimated using two estimation methods, the

Ordinary Least Square (OLS) and the binary choice probit (PROBIT) estimator as an alternative method of dealing with zeroes presence in the dataset. The appropriateness of the estimated models has been tested using the Ramsey RESET misspecification test. The results from the model selection test indicate that PROBIT estimations are appropriate for modelling the relationship between Intra-MENA FDI and its explanatory variables in the context of the gravity model. In order to control for the heterogeneity between countries, as well as to assess for the effects of time invariant variables such as distance and common borders, we use a time and countries dummy variable as a way of implementing fixed effects. Also, because our sample of MENA region comprises a set of countries that are economically diversified, we expect the factors that determine FDI flow to resource-rich countries to be different than resource-poor countries in the region. Therefore, the suggestion (as indicated by Chow test) was to perform separate regressions for each set of countries. The results from the gravity model estimated for the full sample of MENA countries confirm our predictions of the importance of geographical and culture factors as determinants of FDI between MENA countries. FDI within MENA countries was found to be positively driven by the economic size of both sending and receiving countries and negatively by the physical distance between them. The results also indicate that traditional gravity factors play important roles in promoting the level of FDI between MENA countries. The effects of common borders and bilateral investment treaties are particularly relevant to FDI within the region, suggesting that bilateral FDI flows are tend to be larger between neighbours, having already well-established investment treaties agreements. The results from this chapter also show that resource-rich countries receive less FDI compared to resource-poor countries in the region. The results also

show that institutions effect FDI to MENA countries differently. Accordingly, the effect of quality of institutions on FDI to resource-rich country found to be negative while its effect found to be positive on FDI to resource-poor countries.

In the second chapter, we investigate the determinants of FDI to MENA countries in comparison to developing countries. FDI to MENA countries has rapidly increased in the last two decades but not as much as in developing countries. The question that has been investigated in the relevant literature is whether the determinants of FDI to developing countries affect MENA countries differently. Our work is different than the previous work of Onyeiwu (2003) and Sufian and Sidiropoulos (2010) in two respects. First, we include mostly MENA natural resource countries in our sample and investigate in particular for the effect of natural resources on FDI. Second, we include the institutional element in our analysis using composite institutional index that reflect several characteristics of a country's overall quality of institutions, such as the voice and accountability, government effectiveness, regularity quality, rule of law and level of corruption.

The results indicate that if all the values of the explanatory variables were the same for all developing countries, a MENA country will receive about 1.21 percent less FDI than a non-MENA country. The results also indicate that a MENA country receives even less FDI when other relevant economic variables such as the availability of natural resource and the level of macroeconomic instability added to the model. This finding suggests that the availability of natural resource in MENA region has worsened its chance to receive more FDI as much as developing countries. The results indicate that except for trade and institutions, all the interactive terms of the MENA dummy with the explanatory variables are negatively associated with FDI. This indicates clearly that MENA countries on

average have less advantage in attracting more FDI in comparison to developing countries. Our results in this regard suggest that the effect of quality of institutions on FDI to MENA countries is positive, while the interaction between natural resource and institutions on FDI is negative. This finding is different for developing countries in our sample in which the interaction of natural resource and institutions found to be positive.

In chapter seven, we investigate the effects of FDI and business environment conditions on the performance of firms in three MENA countries, Egypt, Morocco and Turkey and two manufacturing industries, textiles and garments over the period 2004-2008. The results indicate that foreign ownership found to have positive significant impact on the performance of firms while domestic ownership found to have negative significant impact on the performance of firms in the three MENA countries. The results also show that performance of textiles and garments firms are hindered by the constraints of business environments in the three MENA countries. The effect of education of labor, access to finance, corruption and electricity outages obstacles were all found to be particular important for growth and performance of firms. Our comparison about the performance of firms in the three countries indicates that textiles and garments firms perform the best in Turkey and Morocco and the worst in Egypt. A dummy variable encoded for country indicated that firms in Egypt have less advantage in their productivity per worker than firms in Turkey and Morocco. The implication for policy makers in Egypt and Morocco following these results is that an increase in the foreign participation in firm and the improvement in the overall business environment condition of firms in Egypt and Morocco can result in optimal level and productivity of firms equal to that in Turkey

8.2. Research Contribution

This thesis is believed to contribute to the literature of FDI determinants in several ways. First, our research is the first in its kind to investigate FDI into MENA countries with especial emphasis on the roles played by the natural resource and institutions on FDI to the region. Most previous studies (reviewed in chapter three) concern FDI determinants in MENA have based their results on selective samples which are often do not include all MENA countries as one block of countries. Also, none of these studies take into account the difference in the economic and institutional structure of resource-rich and resource poor economies in MENA region. For instance, in chapter five, we use a gravity model to investigate the determinants of bilateral FDI between MENA countries and assess for the impact of resource-rich countries in the region using a dummy variable. Also, we extent our analysis and estimate separate regressions for each group of countries. The results from the gravity model estimated for the full sample of MENA countries indicate the disadvantage of resource-rich countries in receiving more FDI compared to resource-poor countries. Furthermore, the results from the gravity model estimated for each group of resource-rich and resource-poor countries indicate that institutions have positive impact on FDI to resource-poor countries only, but not for resource-rich countries.

Likewise, in chapter six, the only study conducted by Onyeiwu (2004) which investigate FDI determinants in MENA countries in comparison to developing countries, used a sample of 51 developing countries in which 10 of them located in MENA region, (Algeria and Iran the only resource-rich countries among the 10 MENA countries). Unlike Onyeiwu' (2004) study, our study include a wide set of

75 developing countries (15 of them located in MENA region) for which data are available from 1996-2011 using a set of economic and institutional variables. Our study also differs than Onyeiwu' (2004) study by adding the institutional element to the analysis using a composite index of the six World Bank Governance Indicators. Our results indicate that natural resources and its interaction with institutions in MENA countries have an adverse effect on FDI even after controlling for the necessary factors for FDI.

In chapter seven, Our research contribute to the limited empirical literature on firms performance and growth in the MENA region by attempting to assess the impact of FDI and various constraints faced by local firms using firm-level data provided by the World Bank Business Enterprise surveys. To the best of our knowledge, this dataset has not been used in any empirical analysis looking at the main constraints on growth in the MENA region (see Atyias 2011). The empirical results from this chapter indicate that foreign firms tend to perform better than domestic firms across countries and industries. Textiles and garments firms in Egypt found to have less advantage in their productivity per worker than firms in Turkey and Morocco.

8.3. Research Policy Implications

Following the empirical findings of this thesis, we suggest some of the important policy implications for policy makers in the MENA region for FDI attraction. The results from chapter five suggest that geographical factors such as physical distance, common borders play an important role in explaining the flow of FDI between MENA countries. MENA countries can increase the level of FDI within

the region by implementing more policies and investment agreements, such as bilateral investment treaties that aim to protect private investment and facilitate businesses between countries. Our results in this regard show that bilateral investment treaties between MENA countries are highly important and have direct significant impact on the flow of FDI within the region. The policy implication following these findings is that MENA countries can eliminate their structural differences by investing more within their region. Many of the resource-rich labour-exporting countries such as GCC countries have the potential for providing capital and creating businesses, investing locally, and can be of great benefit for other resource-poor labour-abundant countries in the region, especially those suffering from a higher level of unemployment and a shortage of financial sources. Also, in order for MENA countries to promote their level of intraregional FDI, there is the need for more effective institutional reform and policies that aim to remove restrictions and economic barriers faced by local investors. Such efforts will make the region more economically integrated and can benefit both foreign and local investors.

The results from chapter six suggest that MENA countries should diversify their economic structures and move away from their high dependency on the natural resource revenue that harms their economies and makes them to be vulnerable to oil price market shocks. In the literature, it has been well-documented that a higher dependency on oil revenues leads to higher government spending, real exchange rate appreciation and a loss of competitiveness in the non-oil tradable sector (e.g. Everhart and Duval-Hernández 2001). MENA countries are not exempt from this case. FDI inflows in oil and gas-related sectors can only limit their chances of receiving more FDI in the manufacturing sectors, in which transfer to technology,

knowledge, skills of labour and jobs creation are more beneficial for the development and welfare of the country. By diversifying their economies, MENA countries will be able to resolve their economic problems, such as the high level of unemployment, upgrade their quality of infrastructure and improve their financial services. The results suggest that the quality of institutions in the MENA region is one of the most important factors for attracting FDI. A fragile institutions framework increases the cost of doing business and limits the attractiveness of MENA as a place to invest. MENA countries can reach an optimal level in FDI inflows as much as in developing countries by improving their quality of institutions. Reducing the level of corruption, protecting property rights, increasing government effectiveness and implementing policies and regulations that promote investment are all equally important for foreign investors.

The results in chapter seven suggest that foreign ownership is associated more with improvements in the productivity of firms in three selected countries (Egypt, Morocco and Turkey), while domestic ownership was found to have a deterring impact on the performance of firms and industry in general. Following this finding, the policy implication for policy makers in MENA countries is to remove restrictions on foreign firms' entry and ownership and pursue a policy for privatising state and domestic-owned enterprises. Privatisation in the MENA region has progressed at a slower pace than in other developing countries, such as Asian and Latin America. Particularly in Egypt, most of the firms operating in the textile and garment industry are still state-owned and their performance is not as superior as that of foreign firms.

8.4. Research Limitations

One of the biggest obstacles for empirical researches and studies on the MENA region is the lack of sufficient data available on these countries. Our desire to include as many countries as possible in order to provide a complete MENA picture conflicts with the scarcity of data in some of the countries considered. Unfortunately, most of the data available on MENA countries are not comprehensive enough to include many variables in our models. Some of the important factors, which have been found to be important determinants of FDI in other empirical studies for developing countries, were not included in this research because of data constraints. For instance, data on human capital, technology, tariff rates and political risk in MENA countries is very scant. Assessing the effect of these variables on FDI inflows to MENA countries is essential, as evidences about their effects on FDI to developing countries were often found to be significant.

Also, one of the important issues that have often been faced by many researchers is the problem of multicollinearity between variables. Our interest to include many FDI determinant variables was often challenged by the problem of multicollinearity that often misleadingly inflates the standard errors. Thus, it makes some of our variables statistically insignificant while they should be otherwise significant. Decomposing the model to more than one is sometimes not informative enough as it does not provide a single model with all the important determinants of FDI.

8.5. Further Area of Research

Empirical studies on the determinants of FDI in the MENA region are generally limited. As mentioned in the previous section, the lack of data available on MENA countries in particular has limited the number of studies on the region considerably. However, in recent years, data have come to be available for researchers and there are different sources emerging that provide data at different levels. With these available sources of data, there is a need for further research, especially at firm-level FDI. The WBES data is potentially an important and rich source of firm-level data. Although this research has used WBES firm-level data to answer some of the questions related to the difference in productivity of foreign and domestic firms, there are still many other questions that have not yet been covered. Atiyas (2011) provides some research questions that would be fruitful for researchers in the MENA region to address in the context of productivity of firms and also what sort of data that can be used to address them. Accordingly, there are very limited researches on the role of information technology and financial constraints in the productivity of firms. Given the availability of recent WBES data, these areas are likely to be rewarding areas of research.

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